

# *Southern Tier Chesapeake Bay TMDL Commenting Coalition*

November 8, 2010

Water Docket  
Environmental Protection Agency  
Mail code: 2822T  
1200 Pennsylvania Ave., NW  
Washington, DC 20460

Re: Comments on the Draft Chesapeake Bay TMDL  
Docket ID: EPA-R03-OW-2010-0736

To Whom It May Concern:

This letter and its Attachment B contains the comments of the Southern Tier Chesapeake Bay TMDL Commenting Coalition (Southern Tier Coalition) a unique, loosely formed coalition representing many of the major New York stakeholders who will be impacted by, and have to pay for, the severe nitrogen, phosphorus and sediment reductions which the Draft Chesapeake Bay TMDL (Draft TMDL) is proposing be imposed on the New York portion of the Bay. As shown on Attachment A, our members represent both point and non-point agricultural sources, as well as municipal and industrial point sources, including dischargers of urban stormwater. Members of the Coalition have three things in Common:

1. We are committed to continuing to be responsible, environmental stewards within our watersheds and within the larger Chesapeake Bay watershed.
2. We object to the artificially low, inequitable and unfair nitrogen, phosphorus allocations which have been assigned to New York in the Draft TMDL.
3. We emphatically state for the record that the cost of achieving the proposed nutrient reductions cannot primarily be paid for by local, or even New York dollars.

As is demonstrated time and time again in the attached Coalition comments, the Bay TMDL as proposed, without significant changes especially to the State-level allocations, is not approvable by EPA and not adoptable by New York and the other Bay States<sup>1</sup> because:

- The Draft TMDL is arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law. As an initial matter, the TMDL violates the plain language of the Clean Water Act and contradicts Congress' intentions regarding promulgation and implementation of TMDLs.

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<sup>1</sup> For simplicity sake, this letter includes the District of Columbia in the term "Bay States."

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- The New York allocations included in the Draft TMDL are arbitrary, capricious, and an abuse of discretion.
  - They fail to account for the decades of responsible stewardship that reduced the nutrient and sediment contributions of the New York Southern Tier while it rewards states who increased contributions to the Chesapeake Bay watershed.
  - New York, and particularly the residents of its Southern Tier, cannot afford to pay the costs which would be necessary to achieve the draft New York allocations. Because of this and fact that most of the environmental and other benefits that would accrue from these actions would occur outside New York State, approval of the Draft TMDL would be arbitrary and capricious unless most of the capital and increased O&M costs for upgraded municipal and industrial wastewater treatment, whose benefit will largely be experienced by people living outside New York, is paid for by non-New York sources.
  - The allocation methodology inappropriately favors states with newer, excess municipal WWTP capacity.
  - Allocations based on generated load rather than delivered load would recognize that both geographic proximity and natural processes play an important role in nutrient-related impacts on the Bay.
  - There are non-arbitrary and capricious methods through which to allocate the required reductions.
- The final TMDL must be adopted by each Bay State, and without substantive changes, it would be arbitrary, capricious and an abuse of discretion for New York State to adopt it.
- The Final TMDL should not include any federal Backstops.
- The draft TMDL assumes unachievable Levels of Technology for both municipal and industrial WWTPs and hence is arbitrary and capricious
- Assumptions made in the Draft TMDL with respect to agricultural loadings and what constitutes achievable further nutrient reductions are arbitrary and capricious and must be changed.
  - The Draft TMDL's overall agricultural-related allocation will drive many small and medium size farms out of business.
  - The attachment to NY's draft WIP, entitled *A Nonpoint Component to the New York CB WIP – Suggestions for Agricultural and Wetland Best Management Practice Implementation to Reduce Nutrients and Sediment Load* (2010), must be considered an integral part of the draft NY WIP but its implementation must be limited to voluntary actions.

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- New York's stormwater contributions to the Bay Watershed are de minimus, and cannot be realistically be reduced. Hence the Final TMDL should not assume that measurable additional reductions are cost-feasible.

Each of the above points is supported by more detail in Attachment B. As spokespersons for the Southern Tier Chesapeake Bay Commenting Coalition, the undersigned will serve as the point of contact should you have any comments or questions with respect to the matters discussed in these comments. The members of the Coalition look forward to continuing to work with USEPA and the New York State Department of Environmental Conservation as the TMDL is finalized and as we continue our on-going efforts to further reduce New York's already low nutrient and sediment contribution to the Chesapeake Bay Watershed, through reasonable cost-effective measures.

Respectfully submitted,

A handwritten signature in blue ink that reads "Jimmie Joe Carl" followed by "(mex)" in parentheses.

Jimmie Joe Carl, P.E, Director,  
Chemung Co. Stormwater Coalition  
607-796-2216

A handwritten signature in blue ink that reads "Mark Watts" followed by "(mex)" in parentheses.

Mark Watts,  
Chemung County Soil & Water Conservation District  
607-796-2216

cc: Southern Tier Commenting Coalition (see Attachment A)  
Ron Entringer, NYSDEC  
Peter Freehafer, NYSDEC  
Libby Ford, QEP, Sr. Env. Health Engineer

# *Southern Tier Chesapeake Bay TMDL*

## *Commenting Coalition Members*

### County Entities

Chemung County			
Sewer Districts	Soil & Water Conservation Districts		Stormwater Coalition
Farm Bureau	IDA		
Tioga County			
Tioga County Legislature	Soil & Water Conservation Districts		Chamber of Commerce
Schuyler County			
Watershed Protection Agency	Environmental Management Council		Water Quality Coordinating Committee
Agriculture and Farmland Protection Board	Partnership for Economic Development		Farm Bureau
Other County Soil & Water Conservation Districts			
Chenango Co.	Madison County	Schuyler County	Steuben County

### Cities

Elmira	Corning	Hornell
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### Villages

Addison	Alfred	Canisteo
Elmira Heights	Hamilton	Horseheads
Millport	Van Etten	Wellsburg

### Towns

Ashland		Baldwin		Big Flats	
Addison		Avoca		Bath	
Bradford		Caton		Corning	
Catlin		Catharine		Cayuta	
Campbell		Cameron		Cohocton	
Canisteo		Chemung		Chenango	
				Erwin	
Fremont		Elmira		Erin	
Hector		Horseheads		Hornellsville	
Hornby		Howard		Lindley	



# *Southern Tier Chesapeake Bay TMDL*

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Hartsville	Jasper	Orange
Owego	Prattsburg	Rathbone
Southport	Thurston	Troupsburg
Tuscarora	Tyrone	Wheeler
Van Etten	Veteran	Woodhull

### **Other County Farm Bureaus**

Allegany	Broome	Chenango
Cortland	Delaware	Herkimer
Livingston	Madison	Oneida
Onondaga	Otsego	Steuben
Tompkins	Tioga	

### **Others**

**Bath Electric, Gas, and Water Systems**

**Northeast Dairy Producers Association**

**Kraft Foods Global (Campbell NY)**

**Southern Tier Economic Growth**

**Attachment B**  
*Comments Submitted by the Southern Tier  
Chesapeake Bay TMDL  
Commenting Coalition*

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**I. The Proposed TMDL is Arbitrary Because it Fails to Account for the Decades of Responsible Stewardship that Reduced Contributions of New York State and the Southern Tier and Rewards States Who Increased Contributions to the Chesapeake Bay Watershed**

EPA has been appropriately describing the proposed Chesapeake Bay TMDL (“Bay TMDL”) as a needed “pollution diet.” However, New York has been on a pollution diet for more than 20 years during which it has steadily decreased the size of its Nitrogen and Phosphorus “waistline.”<sup>1</sup> This has been accomplished through a variety of programs and is demonstrated by the fact that between 1985 and 2010 New York reduced its Nitrogen and Phosphorus loadings to the Chesapeake Bay watershed by 2.44 million pounds a year (MPY) and 0.08 MPY respectively. Despite New York State’s efforts, during the same period baseline contributions from some of the other states within the Chesapeake Bay watershed has actually grown. New York State and the Southern Tier Are Responsible Environmental Stewards and Good Neighbors to the Bay.

EPA has been describing the proposed Bay TMDL as a needed “pollution diet”. We believe that this is an appropriate descriptor. We further believe however, that New York has been on this diet for more then 20 years and during that time it has slowly but steadily decreasing the size of its nitrogen and phosphorus “waistline”. For example, between 1985 and 2010 New York reduced its Nitrogen and Phosphorus loadings to the Chesapeake Bay watershed by 2.44 million pounds a year (MPY) and 0.08 MPY respectively, while baseline contributions from some of the other Bay States has grown.

Like any good diet, the New York Chesapeake Bay nutrient diet<sup>2</sup> has not focused on a single program to achieve the targeted reductions, instead State, regional and local programs have been crafted and implemented with demonstrated affect.

**A. NYSDEC and other Statewide Programs**

Many of the State-wide and regional programs to support the Bay TMDL program are described in the draft New York Phase I Watershed Implementation Plan (NY WIP) submitted in September 2010 by the New York Department of Environmental Conservation (NYSDEC) to support the Bay

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<sup>1</sup> Because New York has already met its 2025 sediment allocation as stated in the draft Bay TMDL, these comments focus mainly on its proposed nutrient (Nitrogen and Phosphorus) allocations.  
FOOTNOTES 2, ETC. BELONG ON NEXT PAGE AND NUMBERING NEEDS TO BE FIXED.]

<sup>2</sup> Because New York has already met its 2025 sediment allocation as stated in the Draft Bay TMDL, these comments focus mainly on its proposed nutrient (Nitrogen and Phosphorus).

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TMDL program. Just a few of these programs are listed below. Please refer to the proposed NY WIP for more details on these programs.

### **1. Dishwasher Detergent and Nutrient Runoff Law**

In keeping with its long standing practice of being proactive and a leader on environmental issues which affect the State and its regional neighbors, the New York Legislature, during its 2010 session, passed the “Dishwasher Detergent and Nutrient Runoff Law”<sup>3</sup>. This law updated New York’s existing ban on phosphorus in most detergents, by expanding the prohibition to dishwasher detergent which was not in common usage when the first ban was passed in the early 1970s. Studies have shown that dishwasher detergents can account for 9 to 34% of total phosphorus in municipal wastewater. It also banned, with few exceptions, the use of phosphorus containing lawn fertilizers in New York beginning on January 1, 2012. Lawn fertilizer typically contains up to 3% phosphorus and can account for up to 50% of the soluble phosphorus in stormwater runoff from lawn areas<sup>4</sup>.

### **2. 2008 Revision of Wastewater Treatment Plant Discharge SPDES Permits**

Twenty-eight “Bay Significant” wastewater treatment plant have been identified in the Draft Bay TMDL. Twenty six of these are municipal wastewater treatment facilities and two are agricultural-related industrial facilities. In 2008 NYSDEC began issuing SPDES permit modifications to these WWTPs that require maintenance of current nutrient removal performance by including nutrient Action Levels based on recent effluent data. These modified SPDES Permits also include a schedule of compliance requiring the implementation of nutrient removal optimization with a goal of achieving effluent levels of 12mg/L nitrogen and 2.0 mg/L of phosphorus. Finally, these permit revisions also require the submitting of reports with the results of an engineering analysis of feasibility and costs of greater levels of treatment. A conceptual design which would allow nutrient on effluent level to fall to 5.0 mg/L total Nitrogen (Nt) and 0.5 mg/L total Phosphorus (Pt). The intent of the engineering evaluation is to gather reliable facility specific data, including costs, to help NYSDEC identify appropriate site-specific remedies and priorities of subsequent capital investment in such significant infrastructure.

### **3. New York Has a Strong CAFO SPDES Permitting Program Which Is Working**

New York State is now into the third five-year cycle of the State Pollution Discharge Elimination System (SPDES) permit for concentrated animal feeding operations (CAFOs). The New York

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<sup>3</sup> Chapter 205 of the Laws of New York 2010, signed by the Governor on July 15, 2010.

<sup>4</sup> Source: NYSDEC Factsheet on the new law at <http://www.dec.ny.gov/chemical/67239.html>.

permitting program applies to both medium and large CAFOs. As required in the most recent (2009) State (ECL) version of this permit<sup>5</sup>:

Medium CAFOs newly authorized under this ECL General Permit must: (1) have all nonstructural practices identified in the CNMP fully implemented, unless the Agricultural Environmental Management (AEM) certified planner and the owner and operator determine that a structural practice not yet scheduled to be installed is required in order for the non-structural practice to be fully operational, (2) be in compliance with the implementation schedule requirements in Part III.C. of the ECL General Permit and (3) be appropriately operating and maintaining all practices implemented prior to obtaining permit coverage.

Large CAFOs newly authorized under this ECL General Permit will need to have a fully implemented CNMP prior to obtaining permit coverage.

In 2005 a Senior Extension Associate with PRODAIRY in the Cornell University Department of Animal Science and others described the successes of the New York CAFO SPDES permitting program to that point in time:

Implementing this aggressive permitting program has been challenging, but it has proceeded exceedingly well. Participation of large CAFOs in the permitting process is believed to be 100 percent. The vast majority of medium and large CAFOs have developed a Comprehensive Nutrient Management Plan (CNMP), and many have implemented dozens of structural and managerial practices with numerous more changes scheduled through 2009 and beyond. Reports indicate that farm inspections by personnel from the Department of Environmental Conservation (DEC) find that most operations are making good progress, with some experiencing a few minor, mainly technical violations. Dozens of private and public sector planners regularly attend training sessions to keep up to date on the latest developments in CAFO planning, science, and policy. The annual Northeast Region Certified Crop Advisor Training held in December and the annual Water Quality Symposium in March offer numerous hours of beginner and advanced CNMP training, including updates on new research, tools for planning, and environmental related sessions. A strong partnership has developed between the New York State Departments of Agriculture and Markets and Environmental Conservation, the U.S. Department of Agriculture Natural Resources Conservation Service (NRCS), Cornell University and Cornell Cooperative Extension (CCE), the New York State Soil and Water Conservation Committee, and soil and water conservation districts (SWCDs). This partnership fosters

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<sup>5</sup> Source: NYSDEC Factsheet on the 2009 ECL CAFO permit (Permit No. GP-0-09-001). Available at [http://www.dec.ny.gov/docs/permits\\_ej\\_operations\\_pdf/eclcafofsheet.pdf](http://www.dec.ny.gov/docs/permits_ej_operations_pdf/eclcafofsheet.pdf).



communication links among the organizations so that multiple priorities and perspectives can be balanced.<sup>6</sup>

#### **4. Local Water Quality Improvement Efforts**

In addition to the above State-wide efforts, a number of local entities have contributed to the ongoing efforts to reduce nutrient and sediment discharges to the Bay watershed over the last twenty-five years, which are discussed throughout these comments.

##### **a. *NY Soil & Water Conservation Districts and Farm Bureau Programs***

The New York Farm Bureau is a non-governmental, volunteer organization financed and controlled by member families for the purpose of solving economic and public policy issues challenging the agricultural industry. For over 65 years, New York State's 58 County Soil & Water Conservation Districts have been providing assistance to landowners, organizations, businesses and local government in the management of natural resources. Established under State law as local government subdivisions, Districts have the unique ability to work on both public and private lands to implement conservation programs that address local needs, while advancing state and federal objectives for protecting natural resources.

Because of their proven ability to identify potential concerns, and implement solutions that serve to correct and prevent problems, Districts are the local go-to agency for an expanding range of issues. Districts are taking a proactive approach to meeting growing community needs, along with an increased workload resulting from new state and federal requirements, by broadening their programs and technical services. In addition to expanding assistance in traditional focus areas such as agriculture, Districts are diversifying into emerging issues including:

- stream and riparian area restoration
- stormwater management
- watershed management
- wetland protection and mitigation
- drinking water protection

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<sup>6</sup> Source: *Clearwaters*, a publication of the New York Water Environment Association, Spring 2005. Available at <http://www.nywea.org/clearwaters/05-1-spring/NYCAFO.pdf>.

- habitat protection and enhancement
- emergency action planning
- flood protection and emergency response
- forest management and urban forestry
- onsite wastewater systems
- open space and farmland protection

Within the 16 County SWCD located in the Bay Watershed, well over 40 million dollars has been invested in our Ag Communities, Stormwater Management, Stream Stabilization, and Wetland Restoration since 1985.

**b. *The Chemung County Stormwater Coalition***

This stormwater Coalition was formed in 2002 to address the Phase II Construction Permit requirements for the MS4's in Chemung County. Its Stormwater Team has been includes a NYS licensed engineer, an environmental educator, and an erosion/sediment control technician that serves the municipalities of Chemung County. The MS4s in Chemung County include the City of Elmira, the Town of Elmira, the Town of Southport, the Town of Big Flats, the Chemung County Department of Public Works, the Town of Horseheads, the Town of Horseheads, the Town of Millport, the Village of Elmira Heights, the Village of Wellsburg, and the Town of Ashland. The mission of the Coalition is to protect and improve water quality and natural resources in Chemung County with the involvement of citizens and agencies through planning, education, coordination, funding, project implementation and advocating for our water resources through a Stormwater Management Program. For each of the last 3 years, the eighteen municipalities within Chemung County have supported the Stormwater Team, each paying a portion of the \$300,000.00 per year budget for the Coalition. Between this and other funding, well over a million dollars has been spent on Stormwater over the past three years.

**c. *Upper Susquehanna River Coalition***

The mission of the Coalition is to protect and improve water quality and natural resources in the Upper Susquehanna River Basin with the involvement of citizens and agencies through planning, education, coordination, funding, project implementation and advocating for our water resources. The USC integrates 3 major focus areas: Wetlands, Streams and Agriculture. To continue to promote clean water conservation in the Upper Susquehanna Watershed, the USC districts use a multiple barrier approach to address nonpoint source issues. This approach addresses water quality issues at the source, across the landscape, focusing on the stream corridor, and is promoted programmatically through research, outreach and training.

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d. *Efforts at Municipal Wastewater and Water System Operations  
within the New York Portion of the Bay watershed*

A number of municipal wastewater and water systems within the New York State portion of the Bay watershed have taken voluntary actions with the objective of reducing their nutrients levels discharged to the Chesapeake Bay watershed. Some of these are briefly described in Appendix A.

**B. Water Quality Within the New York Portion of the Watershed**

The New York streams and rivers which make up our portion of the Bay Watershed have good water quality. Despite some localized impacts due to phosphorus and/or sediments, none of them are included on New York's 303(d) list of Impaired Waters due to significant levels of nutrients. As shown on Figures 1 and 2, based on USGS data the long term mean Total Nitrogen (Nt) loadings at Towanda, Pennsylvania,<sup>7</sup> is 1.135 mg/L and the average Total Phosphorus (Pt) concentration at this location is 0.076 mg/L for P. The nutrient reductions called for in the Draft TMDL are intended to reduce or eliminate excessive algal growth, reduced water quality and to improve Dissolved Oxygen levels in the water. There are no numeric water quality criteria or applicable numeric Nt and Pt water quality standards within either the New York portion of the Bay watershed, or within the Bay itself<sup>8</sup>.

In regards to Nt and Pt, the Figures 1 and 2 USGS data indicates that the quality of the water leaving the New York State portion of the Chesapeake Bay watershed is better than that of Delaware, Washington, D.C., Maryland, Pennsylvania, Virginia, and West Virginia.<sup>9</sup> Furthermore, it is commonly understood that if the water quality of the water entering the Chesapeake Bay was equivalent to that leaving New York in the Susquehanna River, the Bay would not be impaired by excessive algal growth, reduced water quality and nutrient-related low Dissolved Oxygen problems.

Appendix A, Comparison of Unit Area Loadings & Required Removal Percentages, demonstrates the relative water quality by calculating unit area nutrient loadings for edge-of-stream conditions (expressed as lbs of nutrient per year per acre) and comparing them for each Bay State. As used in Appendix A, "unit area loading" is the ratio of the loading from a particular entity to its respective tributary area. Edge-of-stream unit area loadings (as opposed to delivered unit area loadings) reflect local water quality.

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<sup>7</sup> The closest USGS monitoring station in the Susquehanna River downstream from the New York border.

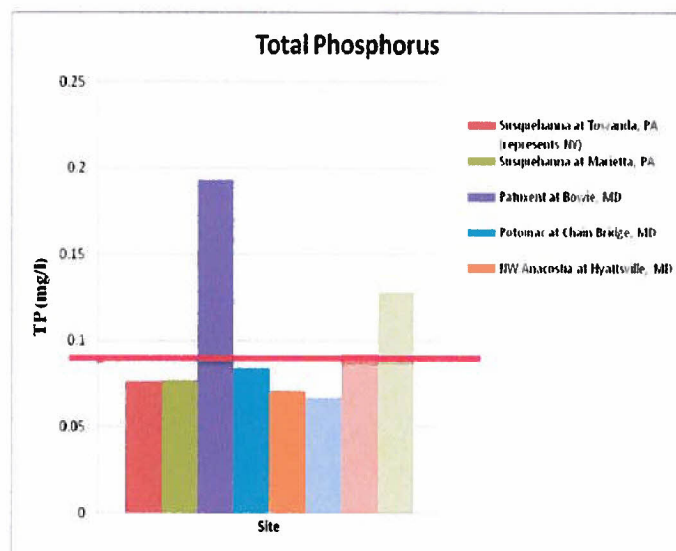
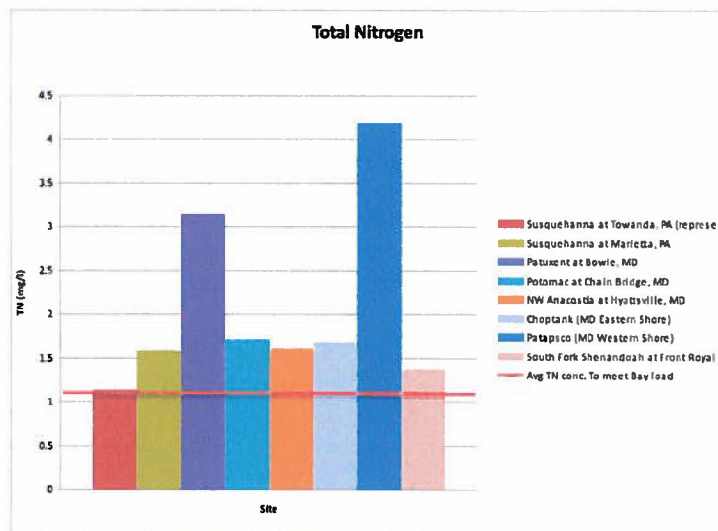
<sup>8</sup> See Draft Bay TMDL at Section 2.

<sup>9</sup> For the purposes of these comments, these 4 states, Washington D.C. and New York are collectively referred to as the "Bay States".

Figures 3 and 4 present edge-of-stream unit area loadings for Nt for each of the Bay States. As shown, New York has the lowest edge-of-stream unit area loading of any of the states.

**Figures 1 and 2**

**USGS Monitoring Data Indicates that the Water in the Susquehanna River as it Leaves New York Is “Clean” with respect to its Nitrogen and Phosphorus Loads**



**Data Source:** USGS Open File Report 2007-1372 *Changes in Stream Flow, Concentration and Loads in Selected Non-tidal Basins in the Chesapeake Bay Watershed, 1985-2006.*

The measurement nutrient concentrations from New York of average total nitrogen and total phosphorus concentrations were taken at the United States Geological Survey (USGS) gauging station in Towanda, Pa and is represented by the dark red bar in each graph. The red line in the graph represents the average concentrations needed to meet water quality standards in the Bay.

River flow to the Bay in 2006 was 18.5 trillion gallons. To meet the Bay goal of 175 million pounds Total Nitrogen loading to Bay, a Nt concentration of  $(175/8.34/18,500.000)$ , or 1.13 mg/L and similarly a Pt concentration  $(12.58/8.34/18,500.00)$  of 0.082 mg/L are needed.

Monitoring data do not exist for a large part of the developed watershed, particularly the Potomac, Rappahannock, Pamunkey, Mattaponi, James riversheds that are below the fall line (River Input Monitoring-RIMS) stations.

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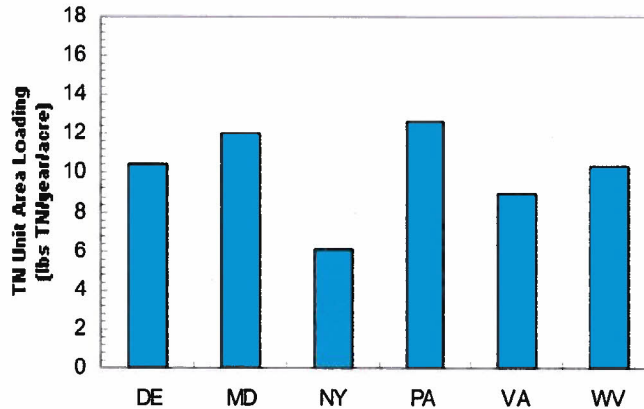
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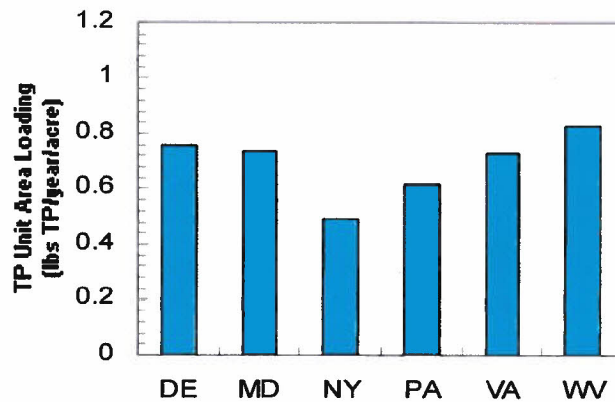


**Figures 3 and 4**

**Edge-of-Stream Unit Area Loadings for TN**



**Edge-of-Stream Unit Area Loadings for TP**



**Source:** These graphs are from Edge-of-Stream Loading and watershed area data for each State, as estimated or used in the Bay Model. While not included on these figures, the edge-of-stream unit area loading for the District of Columbia is estimated to be 81 lbs Nt/year/acre and 4.1 P/year/acre.

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## II. The TMDL is Unapprovable as Proposed Because it is Both Unachievable and Unfair

Under the Clean Water Act, it is the *states* that are required to submit lists of Water Quality Limited Segments (WQLSs) and TMDLs to the EPA at certain times. 33 U.S.C. § 1313(d)(2). Once a state makes the required submission, certain mandatory duties by EPA are triggered and, within 30 days, EPA must review the state's submissions. *Id.* If approved by EPA, the submissions are incorporated *by the state* into its continuing planning process established under CWA § 1313(e)(3). If EPA does not approve the submission, EPA has 30 days after disapproval to make its own identification of waters and establish TMDLs necessary to implement the applicable water quality standards. *Id.* In such a case, the *State* incorporates EPA's TMDLs into its current plan under § 1313(e) of the Clean Water Act. CWA § 303(d)(2), 33 U.S.C. § 1313(d)(2). Thus, the Clean Water Act contemplates that TMDLs are to be developed by the *states* and, while the TMDLs are subject to EPA's authority to review and reject such TMDLs, the steps necessary for actual implementation of the TMDLs remain the province of the states and such standards must be "approvable and defensible" (EPA Memorandum, Robert H. Wayland, III, adopted August 17, 1997 [<http://www.epa.gov/owow/tmdl/lisgid.html>]). While EPA has a further role with respect to its supervision of point source discharge permits, EPA does not have the authority to control nonpoint sources under the Clean Water Act by writing, imposing and then adopting TMDLs for the states when the Act's explicit language delegates those responsibilities to the states.

For the reasons discussed in section II (F) below, finalization and approval of the TMDL without significant changes in the New York allocations would be arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law. As an initial matter, the TMDL violates the plain language of the Clean Water Act and contradicts Congress' intentions regarding promulgation and implementation of TMDLs. As such, EPA must give effect to the unambiguously expressed intent of Congress. *Chevron U.S.A., Inc. v. Natural Res. Def. Council, Inc.*, 467 U.S. 837, 842-43, 81 L. Ed. 2d 694, 104 S. Ct. 2778 (1984). Even if EPA asserts that the TMDL is based on a permissible construction of the statute, EPA's actions are arbitrary and capricious. *See* 5 U.S.C. § 706(2)(A). In drafting the TMDL, EPA relied on factors that Congress did not intend it to consider, failed to consider important aspects of the problem, and has proffered explanations that run counter to the information before the agency. Moreover, the TMDL is so implausible it cannot be ascribed to a difference in view or a product of agency expertise. *See Waterkeeper Alliance, Inc. v. EPA*, 399 F.3d 486, 498 (2d Cir. 2005) (citing *Motor Vehicle Mfrs. Ass'n v. State Farm Mut. Auto. Ins. Co.*, 463 U.S. 29, 43, 103 S. Ct. 2856, 77 L. Ed. 2d 443 (1983)). EPA lacks a rational basis for its TMDL decision in light of the facts before the agency. *See Motor Vehicle Manufacturers Ass'n v. State Farm Mutual Ins. Co.*, 463 U.S. 29, 43, 103 S. Ct. 2856, 2866-67, 77 L. Ed. 2d 443 (1983).

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**A. The New York Allocation is Unachievable**

Tables 1 and 2 summarize the allocations and reductions which are included in the Draft TMDL for the New York portion of the Bay watershed<sup>10</sup>.

**Table 1**

**Draft Chesapeake Bay TMDL Nutrient Delivered Load Allocations  
and  
Expected Reduction Schedule**

Year	Nitrogen			Phosphorus		
	T	PS	NPS	T	PS	NPS
2009	10.54	1.88	8.67	0.80	0.23	0.56
2017 60% reduction goal	9.16	1.63	7.54	0.63	0.18	0.45
2025 TMDL allocation	8.23	0.89	7.35	0.52	0.15	0.37
2025 TMDL allocation w/ reserve	7.82	0.85	6.97	0.49	0.14	0.35
Bay Total 2025	203.14			12.52		

**Notes:**

T = Total Allocation: PS = Point Source Allocation: NPS = Non-Point Source Allocation. Based on Tables 9-1 and 9-2 in the Draft Bay TMDL. Units are million pounds per year. All 2009 values are delivered load and are the output of USEPA Chesapeake Bay Watershed Model Version 5.3.

<sup>10</sup> Source: Tables 3 and 4 in the New York Draft Phase I Watershed Implementation Plan, 9/1/10.

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**Table 2**  
**2009 Nutrient Contribution**  
**from Major NY Source Categories**

Major Source	Nitrogen	Phosphorus
<b>Non-Point Sources</b>		<b>MPY (%)</b>
Agriculture	4.11 (47 %)	0.35 (63 %)
Urban Runoff	0.37 (4 %)	0.03 (5 %)
Septic	0.54 (6 %)	0.00 (0 %)
Forest/Air Deposition	3.65 (42 %)	0.18 (32 %)
<b><i>NPS Total</i></b>	<b><i>8.67 (100%)</i></b>	<b><i>0.56 (100%)</i></b>
<b>Point Sources</b>		
Wastewater	1.65 (88 %)	0.20 (87 %)
MS4 Urban Storm	0.23 (12 %)	0.03 (13 %)
CAFO/ Construction SW/ Industrial SW	De minimis	De minimis
<b><i>PS Totals</i></b>	<b><i>1.88</i></b>	<b><i>0.23</i></b>

**1. Neither the Load or the Waste Load Allocations are Achievable**

As discussed in Section V below, using Nitrogen as an example, because of the more severe winters in new York as compared to the southern portions of the Watershed, the Limit of Technology (LOT) for Biological Nutrient Removal (BNR) is probably 5 mg/L or higher. Because wastewater makes up approximately 88% of the point source load, it is assumed that approximately 88% of the mandated point source reductions would have to come from wastewater sources. According to Table 4-8 in the Draft TMDL, the modeled New York municipal wastewater design flow is 62 MGD<sup>11</sup>, which would equate to an average Nt concentration of 4.1 mg/L, which is lower

<sup>11</sup> And because there seems to be an assumption that the industrial WWTPs can reach the same LOT as the municipal WWTPs. While the Southern Tier Bay TMDL Coalition does not accept this assumption, it is applied here for simplicity sake.



than the assumed BNR LOT in New York. Thus, it will be virtually impossible to achieve this allocation. At an average Nt Annual Loading rate equivalent to 5.0 mg/L (the LOT as determined by NYSDEC) and assuming a 62 MGD flow rate, approximately 0.94 MPY of Nitrogen would be discharged. The draft TMDL (in Table 9-1) proposes a final point source (waste load) allocation of 0.89 MPY<sup>12</sup>. This indicates that even at the New York LOT, just the WWTP load would be higher than the proposed Nt point source allocation, even before the contributions from the other Point Sources are added in. Clearly this WLA is not achievable.

The only other non-de minimis Point Source category in New York identified in the Draft TMDL are the two MS4 communities, which have an estimated total Nitrogen loading of approximately 0.23MPY per year. Under the reductions discussed in the Draft NY WIP is slated to be reduced to 0.11 MPY. In addition, there currently exist a number of permitted Combined Sewer Overflow (CSO) points within the NYC Bay watershed. A large portion of that stormwater associated with these CSOs (including the “first flush”) is already captured and treated at a municipal WWTP. Treating excess wet weather flow is beyond the present WWTP’s technology of control. Already that portion of the flow that exceeds the existing WWTP’s capacity. Total sewer separation is cost prohibitive. Therefore, consistent with the draft NY WIP and discharges from these CSOs should continue to be managed through their respective Long Term Control Plans. Clearly, even if all the nitrogen was removed from these MS4 stormwater (which is an impossibility) and the NY LOT is achieved, the proposed Point Source allocation of 0.89 MPY cannot be met.

Turning to the draft TMDL’s Non-Point Source (Load) Allocation, the Draft TMDL (in Table 9-1) calls for New York achieving a final allocation of 7.35 MPY. While this number seems high, once the combined Forrest and Air Deposition fraction, which is assumed to not be reducible, is subtracted, it leaves only 3.70 MPY available to be allocated between all agricultural non-point sources and the non-MS4 “Urban” runoff. The Coalition supports NYSDEC’s conclusion expressed in the Draft NY WIP, that only an additional approximate 0.05 MPY reduction in the estimated 0.37 MPY non-MS4 “urban” runoff is likely achievable, forcing agricultural NPS croplands to bear the brunt of the Draft TMDL’s Non-Point Source Reduction. Thus, the required agricultural NPS nitrogen reduction would have to be  $4.11 \text{ MPY} - 3.65 \text{ MPY} = 0.46 \text{ MPY}$  (delivered). Because the NY Susquehanna River delivery factor is only approximately 40%, this means that New York farmers within the watershed would have to reduce the amount of Nitrogen in their non-CAFO related stormwater runoff by approximately 1.15 MPY.

In another example, although New York State currently has the lowest unit area loading for Total Phosphorus of any of the states and the District of Columbia, given the current Pt allocation, New York is being required to remove the greatest percentage of phosphorus. This is contradictory,

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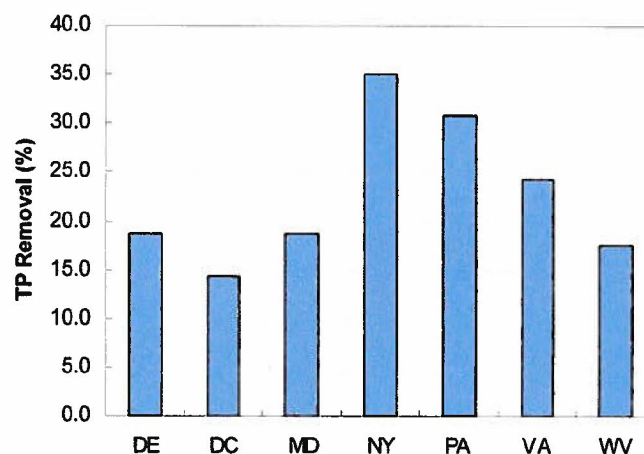
<sup>12</sup> For simplicity sake, the TMDL reductions are those specified in the Draft TMDL without subtracting the additional “reserve” amounts. If the Reserve amounts are subtracted from New York’s allocated loads, then these allocations will be even more unachievable.

excessive, and unfair. The following graph presents the required Pt reduction percentage for each of the states and the District of Columbia. As shown, New York State would have to remove approximately 35 percent of its existing Pt loading to achieve the draft Pt allocation of 520,000 lbs/year.

It is the Coalition's understanding that the USC has estimated that the agriculture allocations could **not be met** even if 50% of the existing farms stopped farming and allowed their lands to go fallow **and** if the number of farm animals currently being raised at Confined Animal Feeding Operations (CAFOs) and smaller Animal Feeding Operations (AFOs) located within the New York portion of the Bay watershed was reduced by 50%. Such measures would have dire impacts on food production and the State economy generally, and on other worthy environmental and sustainable agriculture initiatives, including specifically that food be locally grown where possible.

**Figure 5**

**Required Total Phosphorus (Pt) Removal As a Percentage of Their 2009 Load**



**Because achievement of the Draft TMDL's required nutrient reductions cannot be achieved without putting a significant number of farms out of business, or driving municipalities either towards bankruptcy and/or ignoring more pressing environmental and other needs, it is not achievable. Because the allocation methodology used in the Draft TMDL is unachievable, its use to set the TMDL's allocations is arbitrary, capricious and an abuse of discretion.**

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**2. New York, and Particularly the Residents of Its Southern Tier, Cannot Afford To Pay The Costs Which Would Be Necessary To Achieve the Draft New York Allocations**

Even if New York could achieve its Nitrogen allocation, there would be little or no measurable, let alone visible water quality benefit in New York<sup>13</sup>. Neither NYSDEC nor the USEPA can impose on New Yorkers, especially, as discussed below, those living and working in the Southern Tier, to bear virtually all of the New York's implementation costs. NYSDEC estimates that implementation of its proposed WIP will cost \$440 Million.<sup>14</sup> If the federal Backstops are included, the cost will likely be \$2 to 4 Billion.<sup>15</sup>

Wastewater or BMP installation and implementation rates costs cannot be looked at in isolation when considering whether something is affordable. The outdated USEPA assumption<sup>16</sup> that residents can afford to spend up to 2 % of their median household income on wastewater-related fees cannot be used as a basis for concluding that the implementation costs that would be required if the Draft TMDL is adopted are affordable by New York Bay Watershed residents. As shown in Table 3, this simplistic assumption ignores the financial realities of this portion of New York and given poverty levels, violates EPA's own "environmental justice" policies against environmental programs disproportionately negatively impacting such populations. Using Chemung County (CC) as an example, data from the US Census Bureau paints a stark picture of the current economic realities of life in much of New York's southern tier.

**Table 3**

**Chemung County Key Economic Characteristics\***

Characteristic	CC	US Average
Per capita Income	\$22.8 K	\$27.5 K
Families below poverty level	12.4%	9.6%

<sup>13</sup> NYSDEC has indicated that some of the streams within the New York portion of the Bay watershed are likely impaired to some extent by Phosphorus, and hence some of the Phosphorus reductions called for by the Draft TMDL would likely lead to a measurable and, perhaps even visible, water quality improvement within the State.

<sup>14</sup> Source: NYSDEC presentations at the October 23 and 24, 2010 Public meetings in Elmira and Binghamton NY. The figure includes the ~ \$75 Million already invested in the Binghamton-Johnstown Joint Sewer Board treatment plant upgrade.

<sup>15</sup> Source: NYSDEC presentations at the October 23 and 24, 2010 Public Meetings in Elmira and Binghamton NY.

<sup>16</sup> *Combined Sewer Overflows--Guidance for Financial Capability Assessment and Schedule Development* Environmental Protection Agency, Office of Water, Office of Wastewater Management EPA 832-B-97-004 (February 1997).

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Individuals below poverty level	15.6%	13.2%
In labor force ( $\geq 16$ years of age)	59.7%	65.2%

\* Source: US Census Bureau 2006-2008 American Community Survey for Chemung County<sup>17</sup>

In addition to the New York portion of the Bay Watershed being in an economically depressed area, its resident's cost of living for basic necessities is higher than much of the nation's. Consider the following facts compiled by The Tax Foundation<sup>18</sup> and the U.S. Energy Information Administration<sup>19</sup>.

- New York's State/local tax burden is the second highest in the nation.
- New York's State and local sales taxes rank 11<sup>th</sup> in the nation.
- New York's gasoline tax, at 44.6 cents a gallon, is the highest in the nation.
- Chemung County's property taxes as a percentage of the median house value are the 4<sup>th</sup> highest in the Nation. Other New York Bay watershed counties which rank in the top 30 property tax counties in the Nation in this category include Onondaga (7<sup>th</sup>), Steuben (9<sup>th</sup>), Madison (10<sup>th</sup>), Oneida (19<sup>th</sup>), Broome (23<sup>rd</sup>) and Tompkins (28<sup>th</sup>).
- New York's residential electricity rate (as of July 2010) was 19.58 cents per kilowatt hour as compared to the national average of 12.01.

**Put simply, residents of the New York portion of the Bay watershed simply do not have the wherewithal to pay the bulk of the cost to meet the requirements anticipated by the draft New York Phase I WIP, let alone the cost of any of the federal Backstops which are included in the final TMDL.** The communities that are Coalition members understand that they must spend their tax dollars wisely and ask our residents, farmers and industry to do what is necessary, but this cannot include paying for things which will not benefit the local environment, are unachievable, do not require an equivalent magnitude of sacrifice from the communities that do directly benefit, and which are based on inaccurate and outdated assumptions which disregard progress made to date to achieve these objectives. The inclusion of any of the federal Backstop provisions in the final

<sup>17</sup> [http://factfinder.census.gov/servlet/ACSSAFFacts?\\_event=Search&geo\\_id=04000US36&\\_geoContext=01000US%7C04000US36&\\_street=&\\_county=Chemung&\\_cityTown=Chemung&\\_state=04000US36&\\_zip=&\\_lang=en&\\_sse=on&ActiveGeoDiv=geoSelect&\\_useEV=&pctxt=fph&pgsl=040&\\_submenuId=factsheet\\_1&ds\\_name=ACS\\_2008\\_3YR\\_SAFF&\\_ci\\_nbr=null&qtr\\_name=null&reg=null%3Anull&\\_keyword=&\\_industry=](http://factfinder.census.gov/servlet/ACSSAFFacts?_event=Search&geo_id=04000US36&_geoContext=01000US%7C04000US36&_street=&_county=Chemung&_cityTown=Chemung&_state=04000US36&_zip=&_lang=en&_sse=on&ActiveGeoDiv=geoSelect&_useEV=&pctxt=fph&pgsl=040&_submenuId=factsheet_1&ds_name=ACS_2008_3YR_SAFF&_ci_nbr=null&qtr_name=null&reg=null%3Anull&_keyword=&_industry=)

<sup>18</sup> See <http://www.taxfoundation.org/research/topic/46.html>.

<sup>19</sup> See [http://www.eia.doe.gov/electricity/epm/table5\\_6\\_a.html](http://www.eia.doe.gov/electricity/epm/table5_6_a.html)

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TMDL would amount to EPA endorsing a notion so implausible (that is, the concept that the required actions can all be funded between now and the end of 2025), so as to render the TMDL unapprovable. EPA's imposition of the TMDL causes a burden on interstate commerce that is excessive and not incidental to the local benefits that would be received by implementation of the TMDL. *See Sherwin-Williams Co. v. National Paint and Coatings Ass'n*, (334 F. Supp. 2d 187 (N.D.N.Y. 2004)).

EPA's TMDL would place an excessive burden on interstate commerce because, among other reasons, the limits are not technically feasible, are stricter than the standards in other states, are proportionately more restrictive than the TMDL limits in other Chesapeake Bay states, imposes a financial and administrative burden on Coalition members and other entities that outweighs the benefits that would be received by Coalition members and the State of New York, alternative standards exist that would not burden interstate commerce and EPA's TMDL would impede the marketing of Coalition members' goods in New York State and the interstate marketplace in general.

As shown above, New Yorkers living within the Bay watershed certainly can't pay these costs by fee increases alone (e.g. bond issuances). While bonding most of the capital improvement costs might be feasible for some of these municipalities. New York municipalities have only two ways to pay for incurred costs. They must either increase local taxes, or secure financing through increasing their indebtedness. Further, operation and maintenance (O&M) and other on-going expenses can only be paid by taxes or fees<sup>20</sup>. New York municipalities must be not only environmental stewards, but also good fiscal stewards. Before they can accept a new or modified individual or General SPDES permit from NYSDEC which would entail capital improvements, especially on the scale envisioned by the Draft TMDL with federal Backstops, the municipalities ensure that they have the ability to raise funds to pay both the capital and the ongoing O&M costs of these improvements. If they cannot pay for the improvements that would be necessary to meet the proposed permit requirement, they may not legally be able to accept the modified permit.<sup>21</sup>

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<sup>20</sup> In general, and as an example, towns in New York have no general power to borrow money for municipal purposes or to pay town charges, the policy of the law being that such charges shall be met by taxation. A town may not be made liable for money borrowed on its credit simply because it has been applied for town purposes. *Wells v. Town of Sauna*, 119 N.Y. 280 (1890). Section 125 of New York's Second Class Cities Law provides that no person shall have power to make any purchase or contract any debt for which the city shall be liable unless specifically authorized. *Wooley v. City of Schenectady* 226 A.D. 383, (3rd Dept. 1929). Finally, New York municipalities must typically obtain specific legislative authority to contract virtually all indebtedness. *Adrello v. Dulan*, 1966, 2 NY.S.2d 738 (Sup. Ct. Oneida County 1966).

<sup>21</sup> The Coalition acknowledges that NYSDEC could issue Permits with these limits unilaterally. However, all this would do is force permit violations to accrue, adding significant monetary penalties on top of the capital costs (which the municipality would have already concluded could not be paid).

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Once the allocations are included in a final TMDL, if New York then accepts and adopts that TMDL (see section II(F) below), it will then be bound by the CWA and EPA's implementing regulations to include those allocations in its subsequent Individual, Industrial Stormwater, MS4 and CAFO General SPDES Permits. Because New York cannot approve a TMDL which it knows cannot be implemented within the timeframes built into the TMDL, due to cost and other reasons, it will have no option but to refuse to adopt the Bay TMDL. To approve it would be both contrary to the clear evidence before it achievement of the TMDL stated allocations and endpoints within the specified timeframe is impossible.

a. ***Unfair and Inefficient Funding Plan***

The Draft TMDL's basic approach for the restoration of the Chesapeake Bay generally consists of the establishment of nutrient allocations for each jurisdiction, of which the individual Bay States and their Bay Watershed municipalities and residents would be responsible to achieve by funding the associated necessary improvements. This would place very large unfunded mandates upon each state in the Bay watershed. Some of these states, including New York State, geographically are remote from the Bay, already have good water quality, and derive no direct benefit from the Bay.

The Draft TMDL current allocation approach appears to be more of a political solution that diffusely spreads "responsibility" across the entire watershed, as opposed to devising cost-effective solutions by focusing the greatest burden on the communities whose development both cause the greatest impacts and derive the greatest direct benefits from their proximity to the resource.. Because resources to address the restoration of the Bay are limited and the need for cost-effective solutions is paramount, it is doubtful that "biggest bang for the buck" opportunities to reduce nutrients exist in New York State, given its already good water quality and its low nutrient delivery factors. At a time when there is already a large State Budget Deficit indicating that, in all likelihood, most of the significant implementation costs (up to \$4 billion) would have to be paid by the relatively low population-base within this portion of New York.

Other more equitable funding approaches for the Chesapeake Bay restoration initiative exist, as opposed to placing unfunded mandates upon the individual states, some of which cannot pay them. In addition, these alternate funding approaches, if applied, may lead to the development of cost-effective solutions which would allow actual water quality improvements to occur within the Bay.

b. ***A Significant Federally Funded Approach Is Needed***

The Chesapeake Bay has been widely acknowledged by various national figures as a "national treasure" leading to the obvious conclusion that the most fair solution for its restoration likely extends across state boundaries. Therefore, a federally administered and funded approach is be the most equitable method to fund Bay restoration. The federal government's ability to lead the

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Chesapeake Bay restoration effort would be significantly diminished by anything less than a largely federally funded approach, compromising the effectiveness of this initiative and risking its failure.

If a National funding approach, dedicated to restoring this national treasure is adopted, comprehensive solutions that ignore state boundaries as they could then be selected based upon cost-effectiveness and creativity (as opposed to political “solutions” that focus upon creating the appearance of allocation equity without providing the funding needed to achieve these allocations).

c. *New York City Watershed Model as a Funding Model*

A template for a potential funding approach for the Chesapeake Bay Restoration Initiative may already exist with the New York City Watershed model. In the New York City Watershed program, a downstream entity (New York City) requiring improved water quality has paid for upstream improvements which were not needed to address upstream local water quality but solely/largely to achieve downstream water quality benefits. The New York City/NYC Watershed scenario parallels the Bay States/New York State relationship in regards to the Chesapeake Bay Restoration Initiative.

**Our Coalition calls upon the federal government to shoulder the majority of both the capital and increased operation and maintenance cost of implementing the final TMDL, at least within the headwaters, non-Bay touching states of New York, West Virginia and Pennsylvania.** Those States whose shores directly touch the Bay which, perhaps not coincidentally, are also experiencing the highest population growth, whose residents, for the most part, are more affluent than the Bay watershed headwater residents, and who directly benefit from their proximity to the Bay, should pay a greater share of their TMDL-related costs directly.

**B. Huge Excess POTW Capacity in the Southern Part of the Watershed Unfairly Influenced the Proposed Allocations and Will Promote Even Higher Growth Very Close to the Bay**

A large surplus of unused, already built wastewater treatment plant capacity exists in certain southern Bay States, most notably Virginia and Maryland. Virginia and Maryland have over 400 MGD and 250 MGD of surplus wastewater treatment plant capacity respectively, for a combined surplus of 650 MGD.

Assuming that on the average 100 gallons per day is utilized per person, the combined surplus capacity for Virginia and Maryland would roughly accommodate the wastewater produced by the following increase in population.

$$= 650,000,000 \text{ GPD} / (100 \text{ gallons/day/person})$$

$$= 6,500,000 \text{ people}$$

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The additional future population that could be served by the surplus treatment capacity in Virginia and Maryland represents over a 39 percent increase above the current population within the entire Chesapeake Bay Watershed.

The surplus treatment capacity and the associated increase in population that it could accommodate are significant in magnitude and represent a significant environmental issue. The magnitude of this potential growth, the associated urban runoff related pollutant loadings, and other environmental issues would be substantial. To illustrate this magnitude, the following comparisons are offered.

- The surplus capacity of the WWTPs within the New York State portion of the watershed is roughly 21 MGD, about 3 percent of the surplus capacity in Virginia and Maryland.
- The additional future population that could be served by the surplus treatment capacity in Virginia and Maryland is 10 times that of the current population within the New York State portion of the Bay watershed.
- As a point of comparison, the flow rate of the surplus Maryland and Virginia WWTP capacity of 650 MGD (1005 CFS) is greater than the median flow of the Chemung River at Chemung, NY of 661 CFS<sup>22</sup>.

A number of concerns exist regarding the magnitude of the surplus WWTP capacity that Virginia and Maryland presently have, including:

1. Any reductions in nutrient loadings made within New York State would be dwarfed by the increased loadings within Virginia and Maryland if all, or a significant portion, of this surplus capacity is utilized. Given the rapid population growth in Virginia and Maryland over the past two decades and the potential for substantial continued growth and increased nutrient loadings in those states between now and 2025, the stringent nutrient reductions set forth in the Draft TMDL for New York is mainly needed to allow a fraction of the additional population grown envisioned by this excess POTW capacity in Maryland and Virginia to occur. **New Yorkers cannot be forced to pay to create an offset needed for the anticipated population growth in Maryland and Virginia.**
2. Emerging pollutant loadings including endocrine disrupting chemicals, entering the Bay would also increase, with a growing population within Virginia and Maryland.
3. If unused by an increased population, the surplus WWTP capacity could potentially be utilized by Virginia and Maryland as a substantial nutrient trading bank, where credits could

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<sup>22</sup> Statistical data from USGS 01531000 Gaging Station on Chemung River at Chemung NY, <http://waterdata.usgs.gov/nwis/uv?01531000>

be sold to other Bay States that require offsets because currently excess POTW capacity to meet that growth hasn't been built. A number of potential scenarios could develop that would not be favorable for New York.

As a hypothetical example, a Village in New York State might have an opportunity for significant growth but would need to expand its WWTP to support this growth. Purchasing (through Trading) nutrient credits from a southern Bay WWTP that has excess capacity might be the most cost-effective nutrient reductions possible.

A number of questions and issues exist regarding this topic. How much of this surplus WWTP capacity in Virginia and Maryland was created from WWTP expansion/upgrade projects that received federal funding? In the future, can nutrient credits for unused capacity at the WWTPs that received federal funding be transferred, at no cost to WWTPs in other Bay states that need additional nutrient credits?

### **C. The New York Nutrient Allocations Is Unfair**

#### **1. Allocation Methodology Was Changed Without Notice**

In its 2003 document on how reduction allocations would be made, it was stated that the allocated reductions were to be based on the principal that those States which derived the most direct benefit from the Bay (i.e. DC, MD and VA) should have to reduce the most. By the time the draft TMDL was released, this allocation principle had been largely abandoned in favor of calling for "E3 Reductions", that is, "everything must be done by everyone, everywhere". It is the Coalition's understanding that New York and perhaps some of the other Bay States, were not consulted on this major policy change. As such, if EPA approves the draft TMDL without providing serious consideration to the objections voiced to this change by New York, other Bay States, and at least key stakeholders such as our Coalition members, it will have acted outside the scope of the authority delegated to it by the CWA. This is due to both the fact that §303 (d)(1)(C)<sup>23</sup> of the Clean Water Act (CWA) reserves to the "States" the authority to construct TMDLs, including their allocations and the CWA's general requirement that the public be allowed to review and provide comment on significant regulatory, permitting and policy issues before they are finalized.

#### **2. Lack of Agreement with Nutrient Allocation Methodology**

In its development of the methodology by which nutrient allocations would be distributed, the EPA failed to secure full acceptance of this approach from each affected state. New York State and West Virginia did not believe that EPA's approach would distribute nutrient allocations fairly and accordingly never accepted it. In spite of New York's and West Virginia's rejection of EPA's

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<sup>23</sup> 33 U.S.C. §1313(d)(1)(C).

methodology, EPA ratified its use on the simple basis that the majority (i.e., the states less burdened and most directly benefitted) of the Bay States accepted it.

Although the Nutrient Allocation Methodology should be an important foundation on which Chesapeake Bay Restoration program is built, the lack of unanimous acceptance of its use by each of the Bay States which will ultimately have to implement the TMDL weakens this foundation and erodes the credibility of subsequent requirements developed by applying this methodology.

To illustrate how a different allocation methodology can have significantly different results, an alternate allocation methodology was considered. It is termed “the Uniform Delivered Load Basis” approach. The operating premise of this methodology is that each state and jurisdiction shall receive a delivered nutrient load allocation that is proportionate to their respective percentage of the overall Bay watershed area. This approach is arguably fair in concept and straight-forward. Refer to Appendix C for a more detailed description of this approach. As shown in Appendix C, utilizing the “Uniform Delivered Load Basis” approach, New York State’s nutrient allocations would be higher than its current nutrient loadings.

### **3. The Methodology Inappropriately Favors States with Excess Capacity**

The allocation methodology applied in the Draft TMDL unfairly benefits states which have excess treatment capacity within their WWTP systems. By arbitrarily basing the allocation on the amount of WWTP design capacity states with municipal systems that have recently been constructed and/or upgraded and are early in their 30 year (or longer) post-construction operational cycle (until the next upgrade will likely be needed) are benefitted. The methodology penalizes states that have WWTP’s that are 15 or more years into 30-year planning and/or upgraded, and thus which have already consumed much of their excess capacity. Since a number of the municipal systems surrounding the Bay have newer and updated WWTPs, many of which have been federally funded, the ramification on states such as New York is that the allocation is inherently biased against the rural character of the Southern Tier. As these systems also have older infrastructure, it magnifies the cost burden to New York State and Southern Tier municipalities without a commensurate benefit to the watershed.

### **4. The Lack of Recognition and Favorable Treatment In The Allocation Process Of Nutrient Loading Reductions Between 1985 And 2009 Is Unfair**

From 1985 to 2010, the baseline (“No Action”) pollutant loadings from New York State have been significantly reduced. From 1985, nitrogen loadings and phosphorus loadings from New York have decreased by 2.44 million lbs per year and 0.08 million lbs per year, respectively. These reductions are largely the result of voluntary State and federal agricultural programs, Clean Water

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and Clean Air Act related programs, and the loss of population across and the increase in forested land within the New York portion of the Bay watershed.

On the other hand, certain Bay states have increased their baseline (“No Action”) nutrient loadings significantly since 1985. For example, Bay modeling results estimate that Maryland increased its baseline phosphorus loading from 1985 to 2010 by over 2 million lbs per year, which is more than twice the entire annual delivered phosphorus loading from New York State. Similarly, it is understood that the increase in Virginia’s annual nitrogen loading since 1985 exceeds New York State’s entire annual delivered nitrogen loading.

The baseline nutrient loading reduction in New York State since 1985 is not reflected in the USEPA’s draft allocations. As such, New York State would effectively receive no credit for their past work/nutrient reductions. On the other hand, States that have significantly increased their respective baseline nutrient loadings since 1985 have been granted disproportionately larger state-level allocations, per the USEPA’s R3 allocation process.<sup>1</sup> This is yet another aspect of EPA’s nutrient allocation methodology that is inconsistent, arbitrary, and unfair to New York State.

The effectiveness of the New York’s NPS nutrient reduction improvements over the last twenty five years, which has been translated to unfairly low Non-Point Sources allocation. This unfairly low NPS allocation largely will have to be achieved through agricultural or non-regulated stormwater runoff-reductions. One fairer, but unused allocation criteria would be that each State’s NPS load should be reduced to get same delivered load (rather than by a percentage of their current loads). This would, in essence, provide credits for those Bay States who have already reduced their NPS loads. The net effect of requiring all States to have similar allowable loads from their various NPS sectors, is that the other Bay States would have to reduce their loads to NY’s level to meet the TMDL

**Table 4**  
**2009 Agricultural Nitrogen Loads by State**

State	Pounds	Acres	#/Acre Del	#/Acre EOS
NY	4,114,113	835,421	4.9	10.0
WV	2,815,071	450,682	6.2	24.2
VA	21,564,416	2,817,228	7.7	18.0
MD	17,828,654	1,487,377	12.0	12.7
DE	3,212,641	204,390	15.7	15.9
PA	59,832,890	3,226,985	21.2	30.8

EOS = Edge of Stream

Source: CBP 2009 AA 7 July 2010 Model run

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**D. Allocations Based On Generated Load Rather Than Delivered Load Would Recognize That Both Geographic Proximity and Natural Processes Play an Important Role in Nutrient-Related Impacts on the Bay**

For every 100 pounds of N t released to the Bay Watershed in New York, according to the Bay models only 44 pounds is delivered to the Bay while in the District of Columbia the delivered load is almost 100 pounds for each 100 pounds released. Yet as currently propounded every Bay State must arbitrarily do the same percent reduction. Thus New York must reduce approximately 2.3 times as many pounds to be deemed equivalent to the reductions required in of the District of Columbia. Basing allocations on delivered load is intuitively backwards, as it suggests that a pound of nutrient generated in New York does 2.3 times the water quality damage as a pound generated in Maryland, yet the Bay models project that for every pound of Nitrogen that reach the Bay watershed waters in New York, only 0.44 pounds of it remain in that water by the time it travels to the Bay. All States should get credit for the in-stream nutrient loss nutrient losses between the "edge of stream" and the Bay. It is only fair and logical that natural reductions get as much "credit" as human-induced reductions.

**E. New York Already has been Given the Lowest Allocated Unit Area Nutrient Loadings**

As shown in Appendix B (entitled *Comparison of Unit Area Loadings & Required Removal Percentages*), based on the Draft TMDL's nutrient allocations and associated nutrient delivery factors for each Bay State, allocated unit area nutrient loadings were calculated and are summarized in the following table.

As shown in this table, given the Draft TMDL's nutrient allocations, New York would have the lowest allowable edge-of-stream unit area nutrient loadings of any Bay State. As an example, on a per acre basis, New York would only be allowed to discharge about half of the nutrients as Maryland would be allowed (edge-of-stream basis). This is certainly not equitable and is reflective of a common sentiment in New York that the draft TMDL's nutrient allocations would effectively make New York a green space which would then allow even more development in the lower Bay States. Furthermore, with the draft nutrient allocations, New York's allowable delivered nutrient loadings per acre would only be approximately one third of that those allowed for Maryland.

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**Table 4**  
**2009 Agricultural Nitrogen**

<b>UNIT AREA NUTRIENT LOADINGS (LBS/YEAR/ACRE), BASED ON DRAFT ALLOCATIONS</b>				
	<b>E.O.S NT/AREA</b>	<b>DELIVERED NT/AREA</b>	<b>E.O.S PT/AREA</b>	<b>DELIVERED PT/AREA</b>
DE	7.37	6.55	0.63	0.58
DC	60.10	59.45	3.58	3.08
MD	9.01	6.71	0.60	0.47
NY	<b>4.74</b>	<b>2.07</b>	<b>0.32</b>	<b>0.13</b>
PA	9.14	5.36	0.43	0.19
VA	7.35	3.87	0.56	0.39
WV	8.37	2.06	0.68	0.33

**F. The Final TMDL Must Be Adopted by Each Bay State**

The CWA grants primacy to the States on issues involving Water Quality. Section 303(d)(1)(C) of the Act explicitly requires that States establish TMDLs:

**Each State shall establish** for the waters identified in paragraph (l)(A) of [those on the State's priority waters 303(d) list], and in accordance with the priority ranking, **the total maximum daily load**, for those pollutants which the Administrator identifies under section 304(a)(2) as suitable for such calculation. Such load shall be established at a level necessary to implement the applicable water quality standards with seasonal variations and a margin of safety which takes into account any lack of knowledge concerning the relationship between effluent limitations and water quality.

(Emphasis added.) Even EPA's implementing regulations make it clear that EPA is only supposed to establish TMDLs in the aftermath of its disapproval of a TMDL prepared by a State<sup>24</sup>.

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<sup>24</sup> 40 CFR §130.34.

Because the Clean Water only allows states to promulgate TMDLs, approval of the TMDL (it itself has written) by EPA will not trigger the subsequent CWA § 303(d) (4) requirements to place TMDL point source allocations (WLAs) into S/NPDES permits. While this has not yet been litigated, we believe that a plain reading of § 303(d)(1)(C) in this situation is that, before CWA § 303(d)(4) can be triggered within each of the Bay States, either the state must first adopt the EPA-approved final TMDL draft or EPA must first disapprove the TMDL and then, in theory within 30 days, issue a “new” draft TMDL and subject it to public comment. For the reasons summarized in Section II above, New York adoption of the TMDL without significant changes to the New York Allocations would be arbitrary, capacious and contrary to law through its CWA § 303(e)(3) Continuing Planning Process.

EPA has violated due process and the commerce clause by developing its own multi-state TMDL rather than reviewing and approving or rejecting TMDLs as proposed by states, and by doing so in an arbitrary and capricious manner which fails to utilize the best available technical information, and unduly burdens headwaters states by comparison to states surrounding the receiving waters where the impacts are strongest and most direct.

**G. There Are Non-Arbitrary and Capricious Ways In Which is based on the Ways To Allocate The Required Reductions.**

An allocation methodology can have significantly different results, an alternate allocation methodology is described in Appendix C which illustrates a “Uniform Delivered Load Basis” approach. The operating premise of this methodology is that each Bay State and jurisdiction should receive a delivered nutrient load allocation that is proportionate to their respective percentage of the overall Bay watershed area. This approach is both fair in concept and straight-forward. Based on this analysis, utilizing this alternate allocation methodology, “Uniform Delivered Load Basis”, New York State’s nutrient allocations would be higher than their current nutrient loadings.

Two other possible additional sources of allowable “Nutrient Loadings” which could be re-allocated among the Bay States are briefly described below.

**1. Air Deposition**

The TMDL should have assumed that more reductions from air deposition will have been achieved through various Federal Clean Air Act regulatory programs. As NYSDEC pointed out in its Draft NY WIP, while air deposition accounts for over 34% of the nitrogen flowing to the Bay, the TMDL allocations only call for a 15.7 MPY reduction due to federal CAA regulatory requirements<sup>25</sup>. NYSDEC in its draft WIP has added in another 1,00,000 to 2,000,000 pounds per year reduction in

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<sup>25</sup> Draft TMDL at 6.4.1.

atmospheric-related air deposition within New York related to NYSDEC regulatory programs. We believe the Draft TMDL's assumed reductions are significantly too low. NYSDEC's evaluations have indicated that just the federal nitrogen related air quality requirements that have already been put in place could lead to a 70% reduction from 2007 levels<sup>26</sup>. In addition, EPA has just received a petition from the Clean Air Administrators requesting that EPA promulgate even more NOx related air regulations, in order to address nitrogen related water quality problems throughout the country<sup>27</sup>. Based on this, we believe that the final TMDL must increase the assumed load reduction stemming from required and anticipated CAA-related improvements in air quality. This increase should then be distributed to the Bay States in a fair and equitable manner.

## **2. Balancing The Filter Feeding Biological Populations Within The Bay**

The historic over exploitation of Eastern Oysters and the current over harvesting of Menhaden fish in the Chesapeake Bay have negatively impacted the water quality of the Bay, as Oysters and Menhaden are filter feeders that play an important role in the removal of nutrients from the Chesapeake Bay. The populations of both Eastern Oysters and Menhaden are reportedly declining.

In regards to Eastern Oysters, their current population within the Bay is only about 1 percent of the historic population. Historical over harvesting and loss of habitat is cited as major contributing factors in this decrease. The current goal of the Chesapeake Bay is to increase the Eastern Oyster population tenfold. With this tenfold increase, the oyster population could remove 10 million pounds of nitrogen annually from the Bay.<sup>28</sup> This increase Nitrogen removal would be substantial, exceeding the respective current annual delivered total nitrogen loads of Delaware and West Virginia and being roughly equivalent to New York State's current total nitrogen load to the Bay.

Atlantic Menhaden are a vital link in the food chain, and a balanced, thriving population could have the ability to filter a volume of water equal to the entire Chesapeake Bay in than one day. Menhaden have the potential to consume up to 25 percent of the Bay's nitrogen. However, an intensive fishery seasonally depletes the population of Menhaden within the Bay, arguably one of the Bay's most valuable living resources. Atlantic Menhaden are the most important filter feeder

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<sup>26</sup> New York Draft Phase I WIP at IV(A).

<sup>27</sup> The National Association of Clean Air Agencies, in a resolution adopted Oct. 19, 2010, asked EPA to draft and finalize rules for seven source categories that are responsible for the bulk of nitrogen oxides emissions, sulfur dioxide emissions, and mercury emissions. The petition is available at [http://op.bna.com/env.nsf/id/jsun-8agsqy/\\$File/NACAAir.PDF](http://op.bna.com/env.nsf/id/jsun-8agsqy/$File/NACAAir.PDF).

<sup>28</sup> *Strategies for Allocating Filter Feeder Nutrient Assimilation into the Chesapeake Bay TMDL*, Prepared by TetraTech, Inc., for the USPA, September 24, 2010.

and one of the most abundant species of finfish in the Chesapeake Bay, with the filtering capacity to consume approximately 10 times more phytoplankton than the Eastern Oyster.<sup>29</sup>

According to Appendix U to the Draft TMDL, since the Menhaden population has declined, the following trends in water quality and living resources have been observed.<sup>2</sup>

- The populations of mesozooplankton, the food base for many species, have declined in mid-Bay and lower-Bay waters.
- Food (phytoplankton and zooplankton) generated in the highly productive open water habitats of the Bay has increasingly been shunted towards ctenophores (comb jellyfish) and bacteria and away from fish.
- Comb jellyfish, a predator of zooplankton, fish eggs, and larvae, are increasing in mid-Bay waters.
- Within the Bay main stem water clarity has been decreasing, while levels of nutrients have not changed significantly.

In contrast to the lack of reliance, when setting the TMDL's proposed allocations, on assuming reasonable increases in these important Bay indigenous aquatic species, the Draft TMDL assumes that New York farmers are required to install practices to reduce nutrients. The Draft TMDL recognizes that if a farmer remove a riparian buffer, the nutrient and sediment load goes up because the buffer is no longer filtering the water. Because restoring a balanced, indigenous aquatic populations, including these two important filter feeding species is another important step in the total restoration of the Bay, the protection and proliferation of filter feeders should be a cornerstone of the Bay Restoration Initiative and reasonable successes should be assumed in the base nutrient allocation in the final TMDL. **Appropriate measures to protect these resources and ensure their proliferation are a paramount and a fundamental part of the Bay's integrated restoration should be assumed, by the final TMDL, this would increase the amount of allocable nutrients and sediments that is available to be fairly distributed among the Bay States.**

### **III. The Final TMDL Should Not Include any federal Backstops.**

New York has one of the most advanced and well implemented CAFO control and other agricultural stormwater related water quality improvement program in the country. New York has announced that, in its final Phase I WIP, it will provide supplemental information to support the basis for its "reasonable assurance" that the WIP will achieve the Nt. Pt and Sediment reductions forecasted in the draft WIP. This WIP must be accepted and the State be given at least 4 years to demonstrate that it is on track to achieve its forecasted N, P and sediment reductions.

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<sup>29</sup> *Exploitation of Atlantic Menhaden Threatens Restoration of the Chesapeake Bay*, James Price, Published in the Bay Journal, October 2001.

EPA should not be second guessing New York and the other Bay States with respect to the Non-Point Source reductions they believed can be “reasonably assured” to be achieved. New York has expressed its confidence that, if it is given fair allocations, the implementation plan included in its draft WIP will lead to even further significant reductions in New York’s already low nutrient-related contributions to the Bay watershed. We understand that EPA and NYSDEC have come to a conceptual agreement that the State has established the requisite “reasonable assurance” that the Non-Point Source-related elements in its proposed WIP are realistic and achievable. Therefore, a decision to allow the final TMDL to be based on New York’s proposed WIP is reasonable and supported by the evidence that will be submitted to EPA by NYSDEC. The draft New York WIP will still need to be modified to reflect such things as the fact that BATTLOT for biological treatment of high organic strength industrial food processing wastewater is higher than the 5 mg/L Nt and 0.5 mg/L Pt which NYSDEC has determined represents BAT/LOT for most municipal WWTPs within the Bay Watershed. After EPA has approved the final TMDL, the New York WIP must be used as an “Adaptive Management” document which can change as experience is gained (or if the New York Allocations are increased.)

New York has one of the most advanced and well implemented CAFO control and other agricultural stormwater related water quality improvement programs in the country. We understand that, in its final Phase I WIP, New York will be improving its documentation as to why “reasonable assurance” exists that the WIP will achieve the Nt, Pt and Sediment reductions forecasted in the draft WIP. This WIP must be accepted and then be given at least 4 years to see if the State is on track to achieve its forecasted N, P and sediment reductions.

#### **IV. Other Necessary Elements of a Fair and Implementable TMDL**

In keeping with EPA’s past commitments, **the TMDL must not include numeric nitrogen, phosphorus or sediment-related allocation for any sub-group of sources** (i.e. WWTPs, AFOs and MS4s on the Point Source side and the various categories of Non-Point Source (NPS) land uses on the NPS side. Instead, just an aggregate allocation for all the Point Sources and another one for all the Non-Point Sources categories should be included. Further division of the final WLA should not occur until the next revision of the model is published in 2011. In keeping with this, Appendix Q must be removed from the TMDL.

**Similarly the TMDL should not identify which WWTPs have to do what the draft NY WIP calls “Beyond Phase I” phosphorous or nitrogen reductions.**

Finally, the TMDL and the NY WIP should **explicitly allow trading and other mechanisms** that DEC can use to change allocations within and between the six broad source categories listed in the Draft WIP for the Bay TMDL, **without** having to first have a modification to the TMDL (or the New York WIP) approved by USEPA.

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## **V. Comments on Municipal and Industrial WWTP Issues**

### **A. Level of Treatment Municipal Wastewater Treatment Plants**

Due to our extended cold winters, 3mg/L is not the Limit of Technology (LOT) for biological nitrogen removal (BNR) in New York. Studies indicate that nitrification and denitrification rates increase as temperatures increase (until a maximum temperature is reached). In general, nitrification rates double for every 8 to 10°C rise in temperature<sup>30</sup>. Within New York, however, the situation is reversed. During our long, cold winters both ambient air and wastewater temperatures drop significantly decreasing and, at times, stopping nitrification and denitrification. The effect of temperature on biological phosphorus removal is not completely understood.<sup>31</sup>

The Coalition's understands that NYSDEC has done a BAT evaluation for aerobic biological treatment systems in New York and concluded that 5 mg/L is BAT, and in essence, the LOT for nitrogen removal. Similarly, it has concluded that biological treatment in and of itself does not constitute BAT/LOT. Instead, it has determined that chemical oxidation (without subsequent filtration) is BAT and LOT for phosphorus removal. We defer to NYSDEC to further justify these levels.

Since making this determination, NYSDEC has modified most of the 28 Bay Significant SPDES Permits to insert Action Levels which capped both the concentration and mass loadings of Nt and Pt discharged by these WWTPs. For those New York WWTPs which have some excess capacity, the concentration Action Levels essentially place a moratorium on accepting significant new discharges which have any potentially significant levels of Nt or Pt. In addition, these modified SPDES permits require an engineering evaluation of both how much additional nutrients can be removed by:

- optimizing the operation of the current WWTPs with a goal of reaching 12 mg/L Nt and 2.0 mg/L or less of Pt; and
- reaching the defined BAT levels of 5.0 and 0.5 mg/L respectively for Nt and Pt.

While only 8 of these reports have been submitted to NYSDEC to date, we understand that these reports served as the basis of NYSDEC's estimated that it will cost an additional \$140 Million dollar upgrade these plants to reach the mix of optimized and BAT upgraded WWTPs which NYSDEC built into its draft WIP.

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<sup>30</sup> *Biological Nutrient Removal (BNR) Operation in Wastewater Treatment Plants* Water Environment Federation (WEF) and American Society of Civil Engineers (ASCE)/Environmental and Water Resources Institute (EWRI). 2006. McGraw Hill, New York.

<sup>31</sup> Id.



Because even the current SPDES permits place restrictions on the use of the current excess capacity at these plants, a situation which will be extended to most, if not all, of these 28 Bay Significant WWTPs after the TMDL goes final, especially if any of the federal Backstops are included, “offsets” will be needed by any WWTPs who wish to be able to use their full design capacities<sup>32</sup> or to expand that capacity. Therefore, trading between both permitted Point Sources and Point/Non-Point Sources must be allowed without triggering the need for a TMDL modification, because trading may be the most efficient method of achieving the needed offset.

#### **B. Level of Treatment for Nutrient Removal For High Strength WWTPs**

There are two Bay Significant WWTPs serving industrial plants within the New York portion of the Bay watershed. These are not specifically addressed in the draft New York WIP. For the reasons discussed below, **both the final New York WIP and the final TMDL must recognize that BAT/LOT is significantly different for WWTPs treating high organic strength wastewater and that the determination of what constitutes BAT/LOT must be done on a case-by-case basis.** Both plants are food processors and are important sources of employment for local residents. They are also vital to our local dairy farmers having a local purchaser of much of their dairy products, so they can avoid having to pay significantly higher costs which would be necessary to transport their products to competitors located outside of the Bay watershed. One of these plants, the Kraft Global plant in Cambell, New York is a member of the Southern Tier TMDL Coalition and provided these comments. The Coalition is also very concerned about the effect the draft TMDL would have on the farmers in that area within the northern part of the Bay Watershed, who provide the majority of its raw material milk from local farmers. If they are forced out of production by the TMDL, the viability of these two industrial food processing facilities may be compromised. Obtaining milk from other regions will be at increased cost due to transportation and potentially diminished supply if dairy farms are forced out of business.

##### **1. Background**

#### **C. Level of Treatment for Nutrient Removal For High Strength WWTPs**

There are two Bay Significant WWTPs serving industrial plants within the New York portion of the Bay watershed. Both plants are food processors and are important sources of employment for local residents. They are also vital to our local dairy farmers having a local purchaser of much of their dairy products, so they can avoid having to pay significantly higher costs which would be necessary to transport their products to competitors located outside of the Bay watershed. One of these plants, the Kraft Foods Global (Kraft) plant in Campbell, New York (with close to 400 employees) is a member of the Southern Tier TMDL Coalition. This plant and the Coalition are

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<sup>32</sup> If concentration limits close to the NYSDEC determined BAT (i.e 5 mg/L Nt and 0.5 mg/L Pt) are included in the next round of modified SPDES permits.

very concerned about the effect the draft TMDL would have on the farmers in the area within the northern part of the Bay Watershed, who provide the majority of the raw material milk. If farmers are forced out of production by the TMDL, the viability of these two industrial food processing facilities may be compromised. Obtaining milk from other regions will be at increased cost due to transportation and potentially diminished supply if dairy farms are forced out of business.

#### **A. Level of Treatment for Nutrient Removal For High Strength WWTPs**

There are two Bay Significant WWTPs serving industrial facilities within the New York portion of the Bay watershed. Both facilities are food processors and are important sources of employment for local residents. They are also vital to our local dairy farmers as they are nearby purchasers of much of their dairy products, so the farmers can avoid having to pay significantly higher transportation costs to transport to locations outside the area. One of these, the Kraft Foods Global, Inc. (Kraft Foods) facility in Campbell, New York, employs close to 400 nearby residents and provides a significant economic benefit to the surrounding communities. The local dairy farmers provide the majority of the raw material milk used at the Kraft Foods facility. Kraft Foods is a member of the Southern Tier TMDL Coalition.<sup>33</sup>

This facility and the Coalition are very concerned about the effects the draft TMDL would have not only on the Kraft Foods Campbell facility but also on the farmers in the area within the northern part of the Bay Watershed. If farmers are forced out of production by the TMDL, the viability of the Kraft Foods facility may be compromised because of increased transportation costs. As explained below, the facility would not be able to achieve the proposed limits using its current, advanced system. If there even is a system available to achieve the proposed results, capital costs to implement such a solution most likely would be significant. It is not unreasonable to consider that such costs could reach a prohibitive amount for the facility to continue operating at its current levels, especially if the local supply of dairy is sufficiently diminished.

##### **1. Background**

The Kraft Foods facility produces cheese and related products from milk produced at local dairy farms. From an organic loading perspective, it produces a wastewater that is higher in strength (that is, it has more nutrients) than what a typical municipal WWPT treats. In addition, the volume and the amount of nutrients are highly variable. The retention time is short, which provides a shorter window of opportunity for full processing/digestion of the nutrients.

Additional variability to the wastewater treatment process was added when the treatment plant was upgraded in 2008 to convert waste byproducts, such as whey, into energy. The effective operation of this waste-to-energy WWPT process not only reduces the need for natural gas, but also reduces the need to apply the whey on land, which is an alternate approved use of this byproduct material.

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<sup>33</sup> While Kraft Foods is a member of the Coalition, it does not endorse any statements about the desirability of the NYDEC WIP and instead endorses and signs onto statements concerning USEPA's Chesapeake Bay TMDL.

The facility works hard in its efforts to meet its permit limits given the complexity of its advanced system.

The permit and discharge monitoring reports do not tell the whole story about the system. The volumes indicated in the permit do not reflect the total volume sent to the WWPT because the permit does not address the waste byproduct that is being processed at the WWPT since 2008. Therefore, any inputs and outputs from the conversion of whey and other byproducts to energy are not shown on the discharge monitoring reports.

## **2. Discussion of Permits**

The facility has worked to reduce its nutrient discharge. The current permit does not have any permit limits, but does contain action levels based on a twelve-month rolling average and a request for an engineering report on what would be involved to achieve potential daily targets.<sup>34</sup> In the prior permit (before the 2008 upgrade), the permit did not have any total nitrogen (TN) limit; the current permit action level for Nt is 10 mg/L and the potential daily target is 12 mg/L. For total phosphorus (PT), the prior permit limit was 5 mg/L; the current permit action level is 3.5 mg/L and the potential daily target is 2 mg/L.

Currently the WWPT's twelve-month rolling averages are within the action levels range for mg/L. This gets more challenging to maintain as waste load volumes increase and/or outside temperatures become extreme. The upgraded WWPT facility's ability to meet the potential targets (of 12 mg/LNt and 2 mg/L PT) consistently under seasonal peak loads has not been established.

### **a. Nitrogen:**

For the Kraft Foods WWPT's process to properly operate as a waste-to-energy process that treats the wastewater, nitrogen must be added. This addition is estimated based on incoming flow, which can be a challenge given daily production process variations. Currently, the facility typically removes over 96% of Nt entering the WWPT. Since the upgrade in 2008, the facility's best full-month discharge<sup>35</sup> of Nt was 1.2 mg/L. For that month, loading volumes into the WWPT were relatively low and temperatures favorable. Even at this best level, the facility would exceed the proposed daily pound limits of the TMDL by 1.4 times.

The proposed Appendix Q total nitrogen levels would not be achievable with the current system at the Kraft Foods facility. A significant capital upgrade to include additional biological nutrient removal would be required.

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<sup>34</sup> At the time the report for these potential targets was due, Kraft Foods did not have enough data from steady state processing in the upgraded WWTP facility to establish projected operating and/or capital upgrade costs to achieve these potential targets.

<sup>35</sup> This is calculated based on a calendar month, not the twelve-month rolling average.

**b. Phosphorus:**

Similarly, this recently upgraded facility cannot achieve the proposed Appendix Q allocation level for PT. Milk has a total phosphorus level around 91 mg/L<sup>36</sup>. The proposed backstop level for PT is 0.1 mg/L. This would require treatment to reduce the phosphorus levels by nearly 900 times what milk naturally is. Moreover, the proposed PT limit is approximately 35 times more stringent than the action level in the current permit. Currently, the facility typically removes over 93% of PT entering the WWPT.

Wastewater generated by this facility and sent to the WWPT for treatment has phosphorus from a variety of sources. The principal source, of course, is the milk itself. The phosphorus in the milk gets into the wastewater from water used to rinse the cheese or clean the equipment. The facility needs to add phosphates to the incoming water to prevent the precipitation of manganese, which would otherwise affect the product and likely contribute to pipe corrosion. Thus the wastewater and byproducts that go to the WWPT have a high phosphorus loading. In addition, Kraft Foods' well water PT level is already at the backstop limit of 0.1 mg/L. This further compounds the facility's difficulty in achieving the proposed limit in treated wastewater.

Moreover, the facility's best full-month discharge<sup>37</sup> of PT is 0.73 mg/L. Thus under current ideal operations, the facility would not be able to meet the proposed PT limit of 0.1 mg/L.

Even if the facility were able to meet the BAT of 0.1 mg/L for PT, it still would not meet all of the proposed requirements relating to phosphorus. For example, the Appendix Q draft would limit PT to 36 lbs/year. The facility's permit is based upon wastewater from cheese making only (not the full flow from converting waste to energy); thus even 0.1 mg/L PT when multiplied by the actual flow will surpass the 36 lbs/year limit (in just two days). These proposed limits are unattainable using the facility's current processes, and it is unknown whether they are technically attainable at all.

Under the proposed TMDL limit of 0.1 mg/L, an additional area of the facility's processes would need to be treated before discharge. Currently, well water used in non-contact cooling (about 300,000 gallons per day) is permitted to be discharged without any further treatment. A tighter phosphorus limit would require either another chemical solution (which has not been identified) or another treatment option, such as ultra filtration, to all incoming water.

**D. WWTP Cost issues**

NYSDEC estimates that implementation of its proposed WIP, with its emphasis on all WWTPs optimizing their Nt and Pt removal capabilities and with a number of them having to also do

<sup>36</sup> Reference: <http://www.milkfacts.info/Nutrition%20Facts/Nutrient%20Content.htm#Tab1>.

<sup>37</sup> This is calculated based on a calendar month, not the twelve-month rolling average.

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chemical addition-related Pt removal will cost an estimated additional \$140 Million, plus significant increased ongoing O&M costs. If the federal Backstops are put into place, NYSDEC has estimated that the cost will skyrocket to \$1 to 1.5 Billion.

In addition, most of the New York Bay Significant WWTPs are small, especially compared to many of the municipal WWTPs in the southern part of the Bay watershed. As shown in Table 4, a 2009 EPA publication provided the following flow versus cost data for BNR upgrades. As can be seen, for WWTPs with flows less than 1 MGD, the cost to upgrade for BNR at a WWTP with a design capacity between 0.1 and 1 million gallons a day is 13.7 times as expensive as to do the same removal at a WWTP with a capacity higher than 10 MGD.

**Table 4**  
**Average Unit Costs for BNR Upgrades at MD and CT Wastewater Treatment Plants (2006\$)**

<b>Flow (MGD)</b>	<b>Cost/MGD</b>
< 0.1 – 1.0	\$6,972,000
> 1.0 – 10.0	\$1,742,000
>10.0	\$588,000

Source: Based on data from MDE (2005) and CTDEP (2007), as summarized in Biological Nutrient Removal Processes and Costs, available at [http://water.epa.gov/scitech/swguidance/waterquality/standards/upload/2009\\_01\\_21\\_criteria\\_nutrient\\_bio-removal.pdf](http://water.epa.gov/scitech/swguidance/waterquality/standards/upload/2009_01_21_criteria_nutrient_bio-removal.pdf)

In addition to capital costs, BNR (for Nt and/or Pt reduction) and/or chemical removal for Pt requires a significant increase in the cost to operate the WWTP. For example, NYSDEC estimates that removing phosphorus at a WWTP costs approximately \$1 to \$20 per pound<sup>38</sup>. The combined increased annual O&M cost if upgraded to optimize two Chemung County Sewer District Plants for Nitrogen removal and to carry out chemically enhanced Phosphorus removal has been estimated to be \$1.75 Million/Year.

In addition, the 26 New York Bay Significant POTWs will be forced to also do other significant and costly mandated upgrades within the next 15 years, including:

<sup>38</sup> Source: NYSDEC Factsheet on new ban on Phosphates Dishwasher Detergent and Fertilizers available at <http://www.dec.ny.gov/chemical/67239.html>.

- ***Disinfection***, including possibly for some plants, post-disinfection chlorine removal.
- ***Wet Weather Issues***, including significant I/I reduction and Sanitary Sewer Overflow (SSO) abatement and elimination and for some of Johnson City, implementation of its CSO Long term Control Plan.
- ***Mercury minimization*** and compliance.
- Removal of ***Emerging Contaminants of Concern***.

As discussed in Section II (A) above, the entire New York Southern Tier is in the midst of very difficult economic times. Municipalities are struggling with the need to reduce their costs. There is simply no money available to pay for upgrades to the 26 Bay Significant municipal Wastewater Treatment Plants. Similarly, because the census data indicates that Chemung County (and, assumedly, the rest of the New York portion of the Bay watershed) has higher unemployment than the national average, we cannot allow the cost to our industrial dischargers to rise unfairly, because our residents and dairy farmers count on the jobs and services they provide.

In conclusion, our residents and tax payers already face one of the highest tax burdens in the nation. Therefore, unless EPA can commit money from outside New York to construct and operate the upgraded New York municipal and industrial WWTPs which would be necessary to meet the proposed New York WLA, it must be concluded that achieving the TMDL endpoints is implausible. Because of this, approval of the Draft TMDL would be arbitrary and capricious **unless most of the capital and increased O&M costs for upgraded municipal and industrial wastewater treatment, whose benefit will largely be experienced by people living outside New York, is paid for by non-New York sources.**

**VI. Assumptions Made in the Draft TMDL With Respect to Agricultural Loadings and What Constitutes Achievable Further Nutrient Reductions Are Arbitrary and Capricious and Must Be Changed.**

**A. The Draft TMDL's Overall Agricultural-related Allocation Will Drive Many Small and Medium Size Farms Out of Business**

In the judgment of some of New York's leading agricultural experts convened by the USC, the only possible way to meet the draft TMDL's identified allotment would be if 50% of the farms within

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the watershed ceased operation<sup>39</sup> and the current inventory of farm raised animals (mainly cows) was reduced by 50%.

In general, the Coalition defers to the more detailed analyses of the agricultural-related issues it understands are being made by both the NYSDEC and the USC. However, it believes that some of these issues need to be highlighted here as they underscore why our Coalition, whose members represents most of the New York identified N/P/Sediment sources has come together to demand additional changes to the Draft TMDL before it is finalized.

#### **B. New York's NPS Allocation is Unfair and Needs to be Increased**

The unfairness and unachievable comments made above in Section II (A) apply to the proposed NPS allocation. As the bulk of the proposed NPS Load Allocation (LA) must come from agriculture (as nearly 76 % of the New York Bay watershed is forested), the Load Allocation and the future looking model baseline needs to reflect the fact that New York agriculture has decreased its nutrient-related loads to Bay watershed waters since 1985 while agricultural-related loads in some of the other Bay states have increased significantly. According to data provided by EPA at the October 23 and 24<sup>th</sup> public meetings in New York, the New York agricultural nitrogen loads to the Bay decreased by over 39% (declining from 6.77 Million Pounds Per Year (MPY) to 4.11 MPY) between 1985 and 2009. Similarly, our agriculture-related Phosphorus inputs decreased by 31% (from 0.51 to 0.35 MPY). However, as discussed in Section II(A)(5) above, New York is being penalized for these significant reductions through reduced NPS and PS allocations.

In addition, the models used to derive the Total Maximum Daily Load which the Bay can receive and still meet water quality standards need to better reflect the New York 2010 reality and the type of agricultural BMPs in use in New York rather than those used in Maryland and Virginia. We believe that it is possible that, if the model better reflected New York agricultural practices, it would confirm that New York could meet the reductions with the plan appended to the Draft NY WIP. The Coalition believes that one of the primary reasons for these agriculture-related model problems is that the Chesapeake Bay Committee did not seek input from Cornell University (New York State's land-grant college) during the development/implementation of the models and the associated loading allocations. In contrast, EPA worked closely with the land-grant colleges for the other Bay states, including Virginia Tech, Penn State, etc.

#### **C. Point Source (CAFO)-related Issues**

As recognized by the Draft TMDL's proposed allocations (see Table 1 above), the increased CAFO-related reductions in Nt and Pt loadings which will be required if the Draft NY WIP is implemented would be "de minimis", because New York's existing CAFO permitting program has

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<sup>39</sup> USC Factsheet "Chesapeake Bay Program TMDL Allocations in NY".

already minimized CAFO-related nutrient related additions to Waters of the United States/Waters of [New York] State.

Despite the tremendous work that has been done by New York CAFOs and the regulation of them by NYSDEC which goes beyond EPA's CAFO requirements, EPA in its comments on the Draft New York WIP has indicated both that there is not a "reasonable assurance" that the nutrient reductions called for in the draft WIP will be achieved and secondly that significantly more agricultural-related reductions will be needed. For example, the Draft TMDL includes the following additional CAFO-related "federal Backstops":

- AFOs of any size should be regulated as CAFOs;
- AFOs of any size will have to develop a Comprehensive Nutrient Management Plan (CNMP);
- Large CAFOs will be required to use Precision Feed Management;
- CAFOs of any size will be required to have a manure storage and will be prohibited from spreading manure during the winter;
- All manure applied to crop fields will need to be injected;
- All farms will be required to have ammonia emission controls on their facilities.

Thus, the main additional nutrient-related reductions that can be projected if the federal CAFO-related Backstops are imposed would be by forcing many, if not all, small AFOs to become CAFOs. Assumedly, this would be formalized through a modification of New York's CAFO SPDES Permits so that AFOs within the New York Bay Watershed, modifying the definition of a CAFO by significantly lowering the minimum numbers of animals, perhaps to as low as one must obtain Permit coverage and comply with all Permit mandates. This would likely be done by NYSDEC.

Among the costs this would impose on each newly defined CAFO is approximately \$8,000 a year in Certified Nutrient Planners fees to prepare CNMPs and supporting documents. In addition, significant monies would also have to be invested in structural BMPs and the non-structural BMPs described in New York's draft WIP.

As recognized in New York's proposed WIP, New York's large and medium CAFOs are already leading the nation in reducing CAFO-related nutrient and sediment runoff from enters waters of the United States. Some examples include:

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- New York's CAFO SPDES Permit and its mandated best management practices (BMPs) is being implemented on New York farms. It is the Coalition's understanding that CAFO-related inspections by both EPA and NYSDEC representatives have found a high level of compliance. Further, that most non-compliance issues are related to administrative (mainly record keeping) requirements rather than with those Permit requirements which are intended to eliminate nutrient and sediment discharges.
- Participation of large CAFOs in the permitting process is believed to be 100 percent.
- The vast majority of medium and large CAFOs have developed a Comprehensive Nutrient Management Plan (CNMP), and many have implemented dozens of structural and managerial practices changes.
- In many instances, the New York Natural Resources Conservation Service (NY-NRCS) standards which CAFO owners and operators must comply with to remain compliant with the CAFO SPDES Permits are stricter than the comparable standards in many of the other Bay States.
- The New York CAFO program, as specified in New York's CAFO SPDES General Permits, is clear, actively implemented and enforced. It has State-wide applicability, is practical and is based on sound science.
- When the original CAFO SPDES Permit was issued, New York did not have a working P index in place. The New York Phosphorus Working Group was formed to address this issue. Members included Cornell faculty and staff from the Departments of Crop and Soil Sciences and Biological and Environmental Engineering, staff from the New York City Watershed Agricultural Program, as well as staff from the New York State Soil and Water Conservation Committee and NRCS. The Group worked diligently over a two-year period to mesh field practices with current science to formulate weighting factors that combine to determine the P Index runoff risk score for a particular field. Subsequently, private crop consultants and field staff from soil and water conservation districts and NRCS helped to field test the P Index. The P Index is now an integral part of CAFO-required landspreading practices. It has become a practical management tool that was designed so that higher scores can generally be reduced by selecting lower risk practices for implementation. At the end of the day, if a score cannot be managed below a certain threshold, no phosphorus can be applied to that field from either fertilizer or manure sources. The Index has been supported by dozens of field training sessions, publication of a P Index User's Manual, and a downloadable P Index spreadsheet calculator.

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- While New York had had a Nitrogen Index in since the early 1990s, it was updated when the second New York CAFO Permit became effective. The updated N Index is based upon soil hydrologic group and a seasonally weighted rainfall factor. NY-NRCS provided updated rainfall data that were interpolated to the township level, and this serves as the basis for the revised New York N Index. The addition of town-ship-based data was especially important because the earlier N Index was expressed on a county-average basis, and there are some counties in New York State with substantial rainfall differences from township to township. Also, appropriate N leaching risk reduction practices were updated to require that fall manure applications be made on fields with a live sod or cover crop in high leaching risk soils and locations.
- New York, through the work of Cornell University and its County Soil & Water Conservation Districts, has become the regional leader in Precision Feed Management. This is both incorporated into the draft New York WIP and is an identified Federal Backstop.

**If these additional mandates are placed on New York CAFOs and the smaller AFOs, USC estimates that the requirements will add about 800 regulated farms to a program that has been successful but is financially strained. This, in turn, may lead to reducing the number of cows and heifers within the New York portion of the Bay Watershed by 50%.**

**D. Non-Point Source Agriculture Has, and Will Continue To, Reduced Its Nutrient Loads In Excess of the other Bay States**

In addition to the Point Source-related nutrient reductions discussed above, much work has also been done in New York to reduce nutrient and sediment-related runoff from agriculture NPS within the Bay Watershed. Under the umbrella of the USC's Agricultural Team, which includes partners from NY-NRCS, DEC, Ag and Markets, major universities and all 16 New York County Soil and Water Conservation Districts (which are Coalition members) within the Bay Watershed<sup>40</sup> promote several programs that are intended to reduce agricultural related nutrients and sediments from entering the surface waters. These programs include:

- The New York Agricultural Environmental Management Program (AEM);
  - *Voluntary, incentive-based* program in existence since 1996
  - Progressive planning process to implement BMPs on farms consistent with the resources of each individual farm:

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<sup>40</sup> In addition, of their Pennsylvania counterparts Solid Water Conservation Districts are also members of USC.

- The 5-Tiered AEM process includes an inventory and assessment of environmental risk, conservation planning, implementation of BMPs according to NRCS standards, and evaluation of implemented BMPs to ensure on-going effectiveness.
- Watershed-based but locally lead and implemented
- Reflects local financial and technical needs
- Technical assistance is provided by local Soil and Water Conservation Districts, NRCS, Cornell Cooperative Extension, Certified Planners, and Professional Engineers
- Funding for implementation of AEM generated plans through the Agricultural Nonpoint Source Abatement & Control Grant Program (AGNP) and USDA Farm Bill Programs which nationally provides millions of dollars annually in competitive grants to assist farmers in preventing water pollution from agricultural activities
- Support of “wall to wall” buffers through “Graze-NY” which provides farms with technical assistance to adopt prescribed grazing management systems that contribute to the financial, environmental and social well-being of local watersheds.
- Commitment to proper Herd Nutrient Management through rigorous conservation planner certification process, which is supported by
  - Performance-based Conservation Planner Certifications
  - Regular training for SWCDs (including their Board of Directors) and NY-NRCS employees,
  - Training to, and helping, farmers apply environmentally and agronomically-sound guidelines developed by Cornell University (New York’s Land Grant College).
    - Cornell University promotes resource efficient (nutrients, soil, water, fuel, etc.) farm management along with robust outreach, extension and applied research efforts.

**E. The attachment to NY’s draft WIP, entitled A Nonpoint Component to the New York CB WIP – Suggestions for Agricultural and Wetland Best Management Practice Implementation to Reduce Nutrients and Sediment Load (2010), Must**

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**be Considered an Integral Part of the Draft WIP But Its Implementation  
Limited to Voluntary Actions**

These “suggestions” represent realistic and achievable agriculture related N/P/Sediment reductions practices that are expected to achieve the levels of reduction forecasted by NYSDEC in the draft WIP. The BMPs discussed in this document represent the likely maximum practical N/P/Sediment reduction from the remaining farms in the watershed. They were intended, however, to continue to be implemented as voluntary actions with participation encouraged by educational outreach and the incentive of partial matching funds.

**F. Costs**

Agriculture is New York’s most important industry. The farm economy generated \$4.45 billion in 2008. Farm income is used for employee compensation (\$461 million), maintenance and repairs (\$180 million), property taxes (\$223 million), marketing and transportation (\$106 million), and energy costs (\$267 million), according to 2007-08 data.<sup>41</sup> There are approximately 35,000 farms in New York State, 99 percent of which are family owned. A viable and strong agricultural industry is not only beneficial to the State’s farm and food industry, but to the economy of the State as a whole, hundreds of local communities, and to all consumers of New York.

While the NY draft WIP’s projection of \$170 Million of likely available federal and State moneys to support implementation of this part of the proposed Phase I WIP is probably reasonably accurate, it will only cover approximately 40% of the estimated \$420 Million<sup>42</sup> it will cost to implement the plans in this document.

The mainly small to mid-sized NY farms within the CB watershed can simply not afford to pay the other 60% (~\$250 Million). Even if this part of the proposed Plan is able to be fully implemented, it still will not achieve EPA’s estimated NPS agriculture portion of the NY NPS allocation.

NYSDEC’s estimate as to the cost to meet the identified federal Backstop BMPs for agriculture is between 1 and 3 Billion dollars. This cost simply cannot be born by our Bay watershed farms. If forced to do so, many of them will have no options but to cease farming.

Because neither the NY Draft WIP nor, especially, the federal Backstop NPS agricultural BMPs included in the TMDL can be funded by the identified combination of federal, State, local and

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<sup>41</sup> Source: NY Farm Bureau website.

<sup>42</sup> For example, New York State Agriculture Commissioner Patrick Hooker, has indicated that the measure would cost the 900 Southern Tier farms located in the Chesapeake Watershed approximately \$250 million over the next 15 years on top of the \$170 Million that is likely to be provided by State and federal agencies. See, [http://www.nyfb.org/resources/topic\\_detail.cfm?ID=282](http://www.nyfb.org/resources/topic_detail.cfm?ID=282).

farm-based sources of money, it is asserted that the proposed New York NPS allocation is both unfair and simply unachievable, at least by the year 2025.

It is noted that NYSDEC never agreed to the 2025 deadline, which we believe is unrealistic and unnecessary. While we realize that this deadline is court imposed, history has shown that EPA has often gone back to the courts to get unmeetable water-related deadlines extended where there is good cause. A recent examples include the nearly decade long CWA 316(b) Cooling Water Intake Structure rules in the schedule for the rule promulgations pursuant to *Riverkeeper, Inc. v. Johnson*, U.S. District Court, Southern District of New York No. 93 Civ. 0314 October 12, 2005 was amended twice.

## **VII. Stormwater**

### **A. MS4**

In New York State, the stormwater sector represents a small percentage of the overall nutrient loading leaving the state and reaching the Bay. As per the New York State Tributary Strategy for Chesapeake Bay Restoration (2006), approximately 5 percent of New York's nutrient load is attributed to urban sources. Furthermore, it is anticipated that this percentage will become further reduced, given the recent New York State legislation placing restrictions on nutrients in home fertilizers.

#### **1. There Is No Need For NY to Adopt the Region 3 Urban Stormwater Permitting Guidance.**

The NY portion of the Bay watershed is totally different from most of EPA Region 3. Our portion of the watershed is 76% forested and 21% agriculture. The New York portion of the Bay watershed is not a largely paved urban watershed. We haven't had, and don't expect, the significant population growth and urban/suburban growth that the mid-Atlantic portion of the Bay watershed is experiencing.

#### **2. Retrofitting of Existing Storm Discharges**

In New York, the stormwater sector represents only a small percentage of the overall nutrient loading leaving the state and reaching the Bay. According to the 2006 *New York State Tributary Strategy for Chesapeake Bay Restoration*, approximately 5 percent of New York's nutrient load is attributed to urban sources. Furthermore, it is anticipated that this percentage will become further reduced, given the recent New York State legislation placing restrictions on nutrients in home fertilizers discussed in Section I above.

If the urban stormwater federal Backstops are included in the final TMDL, the requirement for the retrofitting of existing stormwater discharges with structural treatment practices would place an

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immense financial burden upon municipalities, with little benefit in regards to nutrient reduction. The Draft TMDL's Backstop allocations would require 50 percent of the urban MS4 lands to meet aggressive performance standards through retrofit/redevelopment. The NYSDEC has estimated an associated cost of \$1 to \$6 billion to accomplish this. The cost-effectiveness of this requirement would be non-existent, given the limited additional nutrient reduction it would trigger.

In regards to MS4s within a watershed that has nutrient TMDLs, the requirement for the retrofitting of existing stormwater discharges should not automatically be imposed. In the case of the Chesapeake Bay Watershed within New York State, nutrient loads from MS4s within the watershed are only a small portion of the overall loads to the Bay. Furthermore, the ratio of cost (\$) per lb of nutrients removed is exceedingly high for urban stormwater. Simply, removing nutrients from urban stormwater via storm system improvements most likely is not a cost-effective means to reducing the overall nutrient load to the Bay.

### **3. Nutrient Offsetting Requirement**

If nutrient offsetting is required in the management of stormwater within MS4s within the New York State portion of the Chesapeake Bay watershed, development within MS4s would become extremely restrictive. Costs to develop within a MS4 would be significantly increased and permitting/approval processes for new development with a MS4 would become more complicated and extended.

**The requirements of Retrofitting Existing Stormwater Discharges and Nutrient Offsetting would be restrictive for new development in an area of the Bay watershed that desperately needs to halt its population decline and which needs a reasonable amount of population and economic growth. It would be excessively expensive, and would generally inhibit growth within our southern tier MS4s. Furthermore, it is believed that the restrictive nature of these requirements for MS4s would effectively encourage development outside of the designated MS4 areas. This would place these MS4s communities at a competitive disadvantage with non-MS4 areas and growth/restoration of a MS4 would become increasingly stifled. It would also be contrary to the national policy of encouraging sustainable growth by channeling new growth into existing urban areas.**

### **4. Creation of New MS4s/Extension of Boundaries of the Current MS4s**

The creation of new MS4s and the extension of the geographic boundaries of the existing MS4s would result in a large financial and regulatory burden being placed on small communities, with little to no measurable environmental benefits, beyond those currently obtained with existing regulatory structures and requirements. With this approach, smaller municipalities would be designated as MS4s. The subsequent reduction in pollutant loadings from stormwater discharges in these new and expanded MS4s would be only a small portion of the overall load from urban runoff

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sources in New York's portion of the Bay watershed, which in turn is a small portion of the overall nutrient loading to the Bay.

#### **5. More Stringent Design Standards for Existing MS4s**

More stringent design standards for stormwater management facilities, such as enhanced phosphorus removal requirements, would act to increase development costs and would act to increase the sizing, costs, and complexity of stormwater management practices. This would represent another hurdle to the growth/redevelopment of a MS4 community.

A requirement for the retrofitting of existing stormwater discharges with structural treatment practices would place an immense financial burden upon municipalities, with little benefit in regards to nutrient reduction. The draft TMDL's Backstop allocations would require 50 percent of the expanded urban MS4 lands to meet aggressive performance standards through retrofit/redevelopment. The NYSDEC has estimated an associated cost of \$1 to \$6 billion to accommodate this. The cost-effectiveness of this requirement would be non-existent, given the limited nutrient reduction achievable.

In regards to MS4s within the Bay watershed, the requirement for the retrofitting of existing stormwater discharges should not automatically be imposed upon an MS4. Nutrient loads from MS4s within the watershed are only a small portion of the overall loads to the Bay. Furthermore, the ratio of cost (\$) per lb of nutrients removed is exceedingly high for urban stormwater. Simply, removing nutrients from urban stormwater via storm system improvements most likely is not the most cost effective means to reducing the overall nutrient load to the Bay.

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## **Appendix A**

### **Nutrient Reduction Efforts by New York Bay Significant POTWs**

#### **(i) *Binghamton-Johnson City Wastewater Treatment Plant***

In July 2007, the largest wastewater treatment plant in the New York State portion of the Chesapeake Bay watershed completed construction of an enhanced nitrogen removal treatment facility. Input and design requirements for this upgrade included both NYSDEC and EPA input. Presently, this upgraded WWTP is producing an effluent concentration with a Total Nitrogen concentration of ~6 mg/l and the forecasted final average Total Nitrogen concentration in the effluent is 4 to 6 mg/L.

#### **(ii) *Bath Electric Gas and Water Systems (BEGWS)***

BEGWS operates the wastewater and water systems for the Village of Bath. In 2007, BEGWS was fully approved by the New York State Department of Health to begin adding polyphosphate (SeaQuest) as a sequestering agent to their water supply, to control iron and manganese. The water system has occasional problems with red water, due to the impacts of iron in the water supply. Although the use of polyphosphates would have alleviated the impacts of iron and manganese for their water customers, BEGWS chose not to pursue the sequestration, because it was estimated that the Total Phosphorus loading to the wastewater treatment plant (and to the receiving waters) would also be increased by approximately 10 percent.

#### **(iii) *Village of Canisteo Wastewater Treatment Plant***

Over 17 years ago, the Village began to pursue an upgrade/expansion of their wastewater treatment plant. At that time, during the planning process, a decision was made by the Village to replace the existing treatment process (contact-stabilization mode of the activated sludge process) with an entirely new process. The selected process is the sequencing batch reactor (SBR) process, which in the early 1990s was unproven in the region. The SBR process was selected, in part, because it afforded a higher degree of treatment of the influent wastewater stream. Construction began on the SBR plant in November 1994. Of the 28 Significant Bay Wastewater Treatment Plants in New York State, the Village of Canisteo's wastewater treatment plant produces an effluent stream with one of the lowest concentrations of Total Nitrogen, with an average of roughly 5 mg/l.

In consideration of the Chesapeake Bay Restoration efforts, the Village of Canisteo has opted to discontinue the acceptance of hauled liquid wastes to the WWTP and forgo the associated revenue. From 2004 to 2006, an average of 5000 to 8000 gallons per month of septage was being received and treated at the Village's WWTP. The associated daily Nt loading associated with receiving 7000 gallons of septage per month is estimated to be 1.65 lbs Nt per day. This represents roughly 1.8 percent of the current influent Nt loading to the WWTP. The associated daily Pt loading associated with receiving 7000 gallons of septage per month is estimated to be 0.5 lbs Pt per day.

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This represents roughly 4.3 percent of the current influent Nt loading to the WWTP. Furthermore, the Village of Canisteo has been approached a cheese producer, regarding the treatment of their dairy by-product waste stream. The Village declined.

When the Village decided not to accept any hauled wastes to their WWTP, to reduce nutrient loadings, this represented a lost revenue for the Village equal to about 4% of their annual budget. In addition to these losses of potential revenues, between 1970 and 2000, the population of Steuben County decreased by approximately 820 people. Over half of this (436) came from the Village of Canisteo.

The above decisions made by the Village, which were logical in terms of keeping both its headworks and effluent loadings of nitrogen and phosphorus low, represent not only direct lost income to the Village, but arguably, treatment of these wastestreams by the Village in its plant which is achieving essentially Limit of Technology Nitrogen would have removed nitrogen from these sources down to the LOT before discharging it to the Bay watershed.

(iv) *City of Corning Wastewater Treatment Plant*

In 2010, the City of Corning began, on a voluntary trial basis, to add metal salts at its wastewater treatment plant, in an effort to reduce Total Phosphorus concentrations in the effluent stream.

(v) *Town of Owego Wastewater Treatment Plant*

The Town of Owego began, on a voluntary basis, to modify the operation of its wastewater treatment plants with the goal of optimizing the nutrient removal capabilities. Alterations to the aeration and the addition of carbon sources (sugar) have been experimented with. Effluent Total Nitrogen concentrations have been reduced to roughly 12 mg/L or lower.

(vi) *Town of Erwin Wastewater Treatment Plant*

The Town of Erwin upgraded and expanded its WWTP in 2001. The WWTP was expanded to meet the increased development and population growth within the Gang Mills area of the Town of Erwin, which was prompted by the expansion of Corning Incorporated's Sullivan Park research facility. As part of the planning for the expansion of the WWTP, EPA was contacted by the design engineers for this project. At that time, EPA advised that effluent nutrient limits, readily achievable through Biological Nutrient Removal (BNR), would be required at some point in the future. Accordingly, the upgraded Town of Erwin's WWTP is a Sequencing Batch Reactor that was voluntarily sized/designed to incorporate BNR capabilities that could be incorporated in the future.

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## Appendix B

### Comparison of Unit Area Loadings & Required Removal Percentages

On July 1, 2010, the United States Environmental Protection Agency (EPA) issued a letter to Commissioner Pete Grannis of the New York State Department of Environmental Conservation (NYSDEC) that presented draft Total Nitrogen (NT or Nt) and Total Phosphorus (PT or Pt) allocations for New York State. These allocations are included in the Draft TMDL. The following is a short discussion, outlining and comparing the following items for each of the Bay States.

- Current edge-of-stream and delivered Nt and Pt loadings to the Bay
- Required removal percentages for delivered Nt and Pt
- Unit area loadings, based on current edge-of-stream and delivered loadings
- Unit area loadings, based on the draft Nt and Pt allocations

#### I. Current Nutrient Loadings, Draft Allocations, and Required Percent Removals

The following table summarizes the current (2009) Nt and Pt loadings (edge-of-stream and delivered) for each of the Bay States.

TABLE B-1: EXISTING NUTRIENT LOADINGS & TRIBUTARY AREAS					
	AREA (ACRES)	Nt (LBS/YEAR)		Pt (LBS/YEAR)	
		EOS	DELIVERED	EOS	DELIVERED
DE	450,086	4,703,337	4,181,314	342,478	315,660
DC	39,024	3,174,961	3,140,603	159,975	137,436
MD	5,823,192	70,292,000	52,363,404	4,323,008	3,353,583
NY	3,976,515	24,102,172	10,531,401	1,955,905	799,272
PA	14,314,407	181,223,005	106,297,233	8,809,278	3,951,854
VA	13,794,816	123,808,180	65,209,976	10,132,886	7,146,006
WV	2,275,925	23,490,575	5,770,201	1,889,028	912,063

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The following table summarizes the draft delivered nutrient allocations for each state and DC. Also, the associated nutrient reduction percentages, required of each state and DC to realize the draft Nt and Pt loading allocations, are included in this Table.

<b>TABLE B-2: DRAFT NUTRIENT ALLOCATIONS &amp; REQUIRED REMOVALS</b>				
	<b>DELIVERED ALLOCATIONS (LBS/YEAR)</b>		<b>REQUIRED REDUCTIONS (%)</b>	
	<b>Nt</b>	<b>Pt</b>	<b>Nt</b>	<b>Pt</b>
DE	2,950,000	260,000	29.45	17.63
DC	2,320,000	120,000	26.13	12.69
MD	39,090,000	2,720,000	25.35	18.89
NY	<b>8,230,000</b>	<b>520,000</b>	<b>21.85</b>	<b>34.94</b>
PA	76,770,000	2,740,000	27.78	30.67
VA	53,400,000	5,410,000	18.11	24.29
WV	4,680,000	750,000	18.89	17.77

## **II. Unit Area Loadings for Current Nutrient and Draft Allocated Loadings**

Unit area loadings for current nutrient loadings are summarized in the following table. Unit area loadings are ratios of Nt and Pt loadings to the respective tributary areas of each Bay state and DC. The unit area loadings provide a simple means of comparing the relative nutrient loads per acre of tributary area. For this exercise, unit area loadings are expressed in pounds of Nt or Pt/year/acre.

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<b>TABLE B-3: CURRENT UNIT AREA NUTRIENT LOADINGS (LBS/YEAR/ACRE)</b>				
	<b>EOS Nt/AREA</b>	<b>DELIVERED Nt/AREA</b>	<b>E.O.S Pt/AREA</b>	<b>DELIVERED Pt/AREA</b>
DE	10.45	9.29	0.76	0.70
DC	81.36	80.48	4.10	3.52
MD	12.07	8.99	0.74	0.58
NY	<b>6.06</b>	<b>2.65</b>	<b>0.49</b>	<b>0.20</b>
PA	12.66	7.43	0.62	0.28
VA	8.97	4.73	0.73	0.52
WV	10.32	2.54	0.83	0.40

Unit area loadings for the draft allocated nutrient loadings are summarized in the following table. These unit area loadings are ratios of Nt and Pt allocations to the respective tributary areas of each Bay State.

<b>TABLE B-4: UNIT AREA NUTRIENT LOADINGS (LBS/YEAR/ACRE), BASED ON DRAFT ALLOCATIONS</b>				
	<b>EOS Nt/AREA</b>	<b>DELIVERED Nt/AREA</b>	<b>E.O.S Pt/AREA</b>	<b>DELIVERED Pt/AREA</b>
DE	7.37	6.55	0.63	0.58
DC	60.10	59.45	3.58	3.08
MD	9.01	6.71	0.60	0.47
NY	<b>4.74</b>	<b>2.07</b>	<b>0.32</b>	<b>0.13</b>
PA	9.14	5.36	0.43	0.19
VA	7.35	3.87	0.56	0.39
WV	8.37	2.06	0.68	0.33

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### **III. Findings**

Based upon this cursory exercise the following points are noted from the perspective of New York State.

1. New York has the lowest unit area loading for current edge-of-stream Nt and Pt loadings of any of the states or DC. This speaks to better local water quality, in regards to nutrient concentrations.
2. New York has the lowest unit area loading for current delivered Pt of any of the states or DC. Besides West Virginia, New York State has the lowest unit area loading for current delivered Nt of any of the states or DC.

In comparison, the unit area loadings for current delivered Pt for Delaware and Maryland are 3.5 and 2.9 times that of New York State, respectively. Also, the unit area loadings for current delivered Nt for Delaware and Maryland are 3.5 and 3.4 times that of New York State, respectively.

3. Based upon the draft Nt allocations, New York is being mandated to reduce its Pt loadings by 35 percent. This percentage is significantly higher than that of any other Bay State. For example, Delaware and Maryland are being mandated to reduce their Pt loading by 17.6 and 18.9 percent, respectively.
4. In regards to the edge-of-stream nutrient loadings with the draft allocations realized, New York will continue to have the lowest unit area loading for Nt and Pt loadings of any of the states or DC. In comparison, Delaware and Maryland would be allowed to discharge roughly twice the Pt loading per acre than that of New York State. Similarly, Delaware and Maryland would be allowed to discharge 1.5 and 1.9 times the Nt loading per acre than that of New York.
5. New York's current unit area loading for edge-of-stream Nt loading will be lower than that of any of the other Bay State once the allocated Nt loading is achieved. Besides Pennsylvania, New York's current unit area loading for edge-of-stream Pt loading will be lower than that of the other Bay States once the allocated Pt loading is achieved.

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## Appendix C

### A Hypothetical Alternate Approach Regarding the Distribution of Chesapeake Bay Watershed Nutrient Load Allocations

#### I. Purpose of Exercise

The purpose of the following exercise is to present a hypothetical alternate approach regarding the distribution of nutrient load allocations among the various states and jurisdictions within the Chesapeake Bay watershed. This exercise is based on nutrient loading cap loadings delivered to the Bay of 187,440,000 lbs Nt (or NT)/year (without air contributions) and 12,520,000 lbs Pt/year.

#### II. Recent Nutrient Loadings, Delivery Ratios, and Unit Area Loadings

The following table summarizes the current (2009) Nt and Pt loadings (edge-of-stream and delivered) for each of the Bay states and DC. Also, the draft delivered Nt and Pt allocations are noted in this table.

TABLE C-1: EXISTING NUTRIENT LOADINGS & TRIBUTARY AREAS					
	AREA (ACRES)	Nt (LBS/YEAR)		Pt (LBS/YEAR)	
		EOS	DELIVERED	EOS	DELIVERED
DE	450,086	4,703,337	4,181,314	342,478	315,660
DC	39,024	3,174,961	3,140,603	159,975	137,436
MD	5,823,192	70,292,000	52,363,404	4,323,008	3,353,583
NY	3,976,515	24,102,172	10,531,401	1,955,905	799,272
PA	14,314,407	181,223,005	106,297,233	8,809,278	3,951,854
VA	13,794,816	123,808,180	65,209,976	10,132,886	7,146,006
WV	2,275,925	23,490,575	5,770,201	1,889,028	912,063

In Table C-2, the “bulk” delivery ratios to the Bay for each state for Nt and Pt are presented. These ratios are derived from the data in Table 1. For example, the Nt delivery ratio for Pennsylvania is calculated as follows.

$$\text{Delivery Ratio} = \text{Delivered}/\text{EOS} = 106,297,233/181,223,005 = 0.59$$

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TABLE C-2: NUTRIENT DELIVERY RATIOS		
JURISDICTION	Nt	Pt
NY	0.44	0.41
PA	0.59	0.45
MD	0.74	0.78
VA	0.53	0.71
WV	0.25	0.48
DE	0.89	0.92
DC	0.99	0.86

Utilizing the data in Table C-1, the *unit area nutrient loadings* for each Bays are calculated for both the delivered and edge-of-stream (EOS) conditions. These estimates are presented in Table C-3 and are expressed as lbs of Nt or Pt per acre of watershed per year (lbs/acre/yr). For example, the unit area loading for delivered Nt for Virginia is calculated as follows.

$$\text{Unit Area Nt Loading} = 65,209,976 / 13,794,816 \text{ acres} = 4.73 \text{ lbs Nt/acre/year}$$

Unit area loadings for current nutrient loadings are summarized in the following table. Unit area loadings are ratios of Nt and Pt loadings to the respective tributary areas of each Bay State. The unit area loadings provide a simple means of comparing the relative nutrient loads per acre of tributary area. For this exercise, unit area loadings are expressed in pounds of Nt or Pt/year/acre.

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<b>TABLE C-3: CURRENT UNIT AREA NUTRIENT LOADINGS (LBS/YEAR/ACRE)</b>				
	<b>E.O.S Nt/AREA</b>	<b>DELIVERED Nt/AREA</b>	<b>E.O.S Pt/AREA</b>	<b>DELIVERED Pt/AREA</b>
DE	10.45	9.29	0.76	0.70
DC	81.36	80.48	4.10	3.52
MD	12.07	8.99	0.74	0.58
NY	<b>6.06</b>	<b>2.65</b>	<b>0.49</b>	<b>0.20</b>
PA	12.66	7.43	0.62	0.28
VA	8.97	4.73	0.73	0.52
WV	10.32	2.54	0.83	0.40

### III. Nutrient Allocations Based Upon the Uniform Delivered Load Basis

The operating premise of the *Uniform Delivered Load* approach is that the Allowable Delivered nutrient caps would be distributed to the Bay States based upon the respective areas of the watersheds within each state.

Combined Delivered Nt allocation to states = 187,440,000 lbs Nt/year

Combined Delivered Pt allocation to states = 12,520,000 lbs Pt/year

Given that the watershed to the Bay (excluding that of the District of Columbia) is approximately 63,553 square miles, the uniform delivered load ratio for Nt and Pt is calculated as follows.

$$\begin{aligned} \text{Nt Uniform Delivered Load Ratio} &= (187,440,000 \text{ lbs Nt/year}) / (63,553 \text{ square miles} \times 640) \\ &= 4.608 \text{ lbs Nt/acre/year} \end{aligned}$$

$$\begin{aligned} \text{Pt Uniform Delivered Load Ratio} &= (12,520,000 \text{ lbs Pt/year}) / (63,553 \text{ square miles} \times 640) \\ &= 0.308 \text{ lbs Pt/acre/year} \end{aligned}$$

For example, the delivered nutrient allocations for New York State would, in turn, be calculated as follows.

$$\text{Nt Allocation} = 3,976,515 \text{ acres} \times 4.608 / 1,000,000 = 18.32 \text{ million lbs nt/year}$$

$$\text{Pt Allocation} = 3,976,515 \text{ acres} \times 0.308 / 1,000,000 = 1.22 \text{ million lbs pt/year}$$

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The delivered nutrient allocations for each of the Bay States, based on this approach, are summarized in Table C-4. As indicated, the delivered nutrient loadings for 2009 from New York are already below their respective allocations.

<b>TABLE C-4: NUTRIENT ALLOCATIONS - UNIFORM DELIVERED LOAD BASIS</b>			
<b>JURISDICTION</b>	<b>Nt (MILLION LBS/YR)</b>	<b>Pt (MILLION LBS/YR)</b>	<b>COMMENTS</b>
NY	18.32	1.22	<b>Delivered allocations &gt; 2009 delivered loadings</b>
PA	65.9	4.4	Decrease delivered Nt 38%; <b>Delivered Pt allocation &gt; delivered loading</b>
MD	26.8	1.8	Decrease delivered Nt 48.8%; Decrease delivered Pt 46.3%
VA	63.5	4.2	Decrease delivered Nt 2.6%; Decrease delivered Pt 41.3%
WV	10.5	0.7	<b>Delivered Nt allocation &gt; 2009 delivered loading; Decreased delivered Pt 23.2%</b>
DE	2.1	0.14	Decrease delivered Nt 50%; Decrease delivered Pt 55%

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